

MAY, 1949

Commercial Refrigeration

AND AIR CONDITIONING



MERCHANDISING, SELLING, INSTALLATION AND MAINTENANCE OF
COMMERCIAL REFRIGERATION AND AIR CONDITIONING EQUIPMENT

**SURE ROUTE
TO BETTER
DRYING**

**BETTER DRYING
BEGINS HERE...**

and

**ENDS HERE WITH
NO PRESSURE
DROP...**

INTERCHANGEABLE CONNECTIONS — 30, 50 and 75 cu. in. sizes have female flare threads fitted with male unions. This permits size interchangeability.

See Your Jobber!

THE IMPERIAL BRASS MFG. COMPANY, 536 South Racine Street, Chicago 7, Illinois

IMPERIAL

IMPERIAL TORPEDO[®] DRIERS

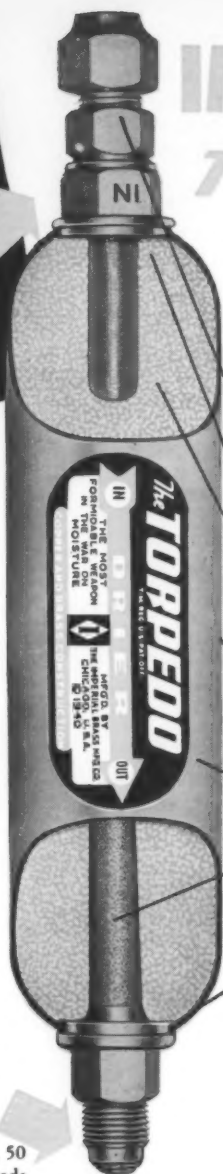
**... designed for faster
more efficient
drying action**

- Note generous wrench flats on hexes on both ends.
- Easily refilled on the job—no soldering required.
- Dust-free Silica Gel assures longer operation. No pressure drop—yet no sacrifice of drying capacity.
- One-piece copper shell. Fewer joints—less chance for leakage.
- Copper and brass construction.
- Greater filtering area. Finger-type metallic depth filter is graduated with drier capacity.
- Brazed—no soft solder joints that might loosen.

CAPACITIES — A complete line to meet all refrigeration applications. Capacities rated in accordance with REMA recommendations. All eight sizes—1/6 to 7-1/2 HP... 3 to 75 cu. in.—furnished complete with flare nuts and copper seal caps.

Ask for your copy of Catalog No. 80-A covering the complete IMPERIAL LINE.

FITTINGS • VALVES • DRIERS • FILTERS
FLOATS • CHARGING LINES
TOOLS for Cutting, Flaring, Bending, Pinch-Off and Swedging



ALCO

SOLENOID VALVES THE COMPLETE LINE

for "Freon," Methyl Chloride, Ammonia, and other refrigerants

for liquid line, suction line, or compressor discharge service

for brine, water, steam, gas, air, oil

for all types of electric current; small commercial valves with dual voltage

for wide range of connections: $\frac{3}{8}$ " to 2 $\frac{1}{2}$ " solder, $\frac{3}{8}$ " to 2" pipe thread

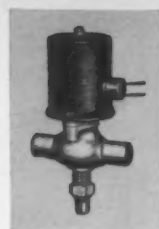
for use with thermostats, timers, and many other control devices

Available at your wholesaler's.

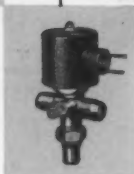
For full details send for proper bulletin by stating intended use of valve.



S1



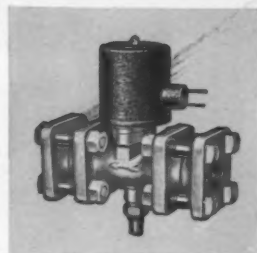
M3



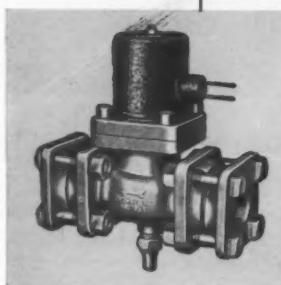
S2



M6



R1



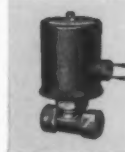
R2, R6

M9F



M5

M8



M915



ALCO VALVE CO.

843 KINGSLAND AVE. • ST. LOUIS 5, MO.

Designers and Manufacturers
of Thermostatic Expansion
Valves; Evaporator Pressure
Regulators; Solenoid Valves;
Float Valves; Float Switches.

MAY, 1949



Why you can CLINCH MORE SALES...

...WITH TEMPRITE

BECAUSE TEMPRITE was designed with sales in mind
... you can clinch more sales with Temprite!

Because the most conservative office manager
... or ... the most practical factory manager
will look upon the Temprite Water Cooler with
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The Temprite water cooler carries with it no
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stainless steel top, from its constant-pressure
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more sales with Temprite.

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available. You can offer the hermetically sealed, air or water cooled
condensing unit or the open type condensing unit. Odd frequencies or
voltages may also be serviced. *All models meet requirements of the
National Bureau of Standards and are approved by Underwriters'
Laboratories. All existing local sanitary codes are being met.*



FOOT PEDAL, is now available as
optional equipment. All pressure
type models maintain virtually
constant stream height in spite of
outside pressure variations of as
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ing spurling and splashing has
been eliminated.

ACCIDENTAL FREEZE-UP will not
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designed Temprite storage tank.

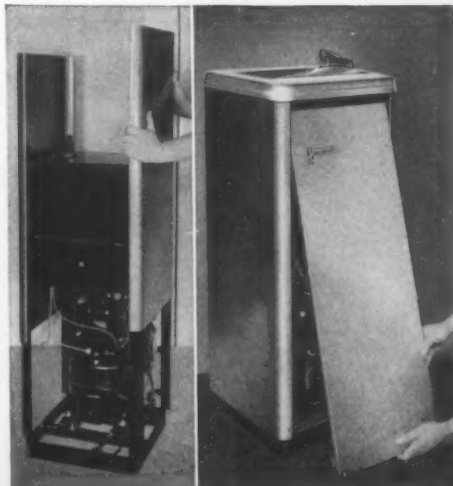
ADJUSTABLE Thermostatic Control
regulates water temperature.

5 YEAR WARRANTY protection plan
available on all hermetic models.



(Above) **EASY FINGER TIP PRESSURE**
starts a smooth, steady flow of
perfectly cooled drinking water!
Sparkling stainless steel top!

(Right) **FRONT PANEL** is removable
in mere seconds for quick servic-
ing. Side panels, not screwed to
frame, may be slid off as shown.
It is unnecessary to remove cabi-
net from plumbing connections.
Any panel which may become
damaged in use, can be replaced
without returning the entire unit.

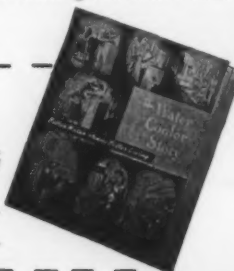


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coolers, industrial water coolers, carbonators, draught
beer coolers, soda fountain coolers, temperature control
valves, oil separators, equalizer tanks, heat exchangers, etc.

MAY, 1949

VOLUME 6, NO. 5

Commercial Refrigeration

AND AIR CONDITIONING

Established 1944 as
THE REFRIGERATION INDUSTRY

THIS MAGAZINE has no
official affiliation with ANY
group, society or association.



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Room 403

THE COVER . . . These aluminum fins running from the third to the thirteenth floor of the new General Petroleum Building in Los Angeles shade the windows on three sides of the structure from the direct rays of the sun and thus save an estimated 100 tons of cooling capacity in the building's air conditioning system. For full details of this air conditioning installation see the story which starts on page 48.

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Acceptance under the Act of June 5, 1934, at Milwaukee, Wisconsin, authorized March 26, 1947.

No. 1 insulation for food and beverage plants...



because

... IT IS SANITARY AND ODORLESS
... IT IS IMMUNE TO VERMIN
... IT IS MOISTURE RESISTANT

Rock Cork* insulation is basically mineral in composition and, therefore, is ideal for service in food and beverage plants. It is repeatedly specified by leading refrigeration engineers because of its long, trouble-free service in many plants.

Rock Cork sheets, lagging and pipe insulations—made from mineral wool and asphalt binder—are available in all standard sizes and thicknesses. The pipe insulation is provided with an asphalt-saturated jacket that protects both longitudinal joints; reduces the need for seam-filling, and speeds application.

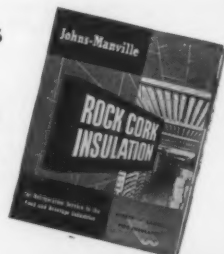
Skilled application service—To assure the maximum return from your insulation investment, have your next job engineered by a Johns-Manville insula-

tion contract firm. For further information write Johns-Manville, Box 290, New York 16, N. Y.

*Reg. U. S. Pat. Off.

**This Folder gives
all the facts—**

Folder IN-122A contains property tables and other important data on Rock Cork's advantages. Send for it today!



Johns-Manville

ROCK CORK

REFRIGERATION INSULATION

JAMISON-BUILT DOORS

For Use in Zero° F. and Below

TO MEET YOUR SPECIFICATIONS

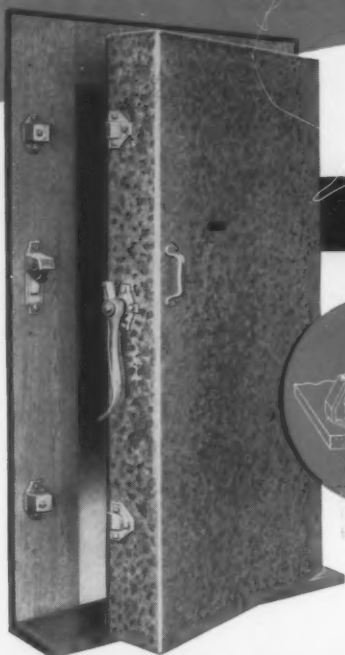
SUPER FREEZER DOOR

Time Proven Overlap Type

The Super Freezer Door made industrial use of sub-zero temperatures practical. Overlap type of construction permits insulation to any desired thickness. The sealing and insulation efficiency of its 4" wide by 3/4" thick, resilient, moisture impervious gasket is exceptional. The unusually strong hardware of special design, supplied as standard equipment on the Super Freezer Door, is largely responsible for its outstanding performance.

Hinges are: Jamison Adjustable Spring Hinges (Pat. No. 1987512). Fastener: Jamison 031 (single point) Roller Fastener (Pat. No. 2083458).

For only slight additional cost Jamison E-Z-Open (Two-Point) Fastener as illustrated (Pat. No. 2147794) will be furnished. Warm side (Front or Back) of Super Freezer Door is covered with No. 20 gauge galvanized steel forming effective vapor barrier and eliminates possible deterioration due to moisture precipitation.



LO-TEMP DOOR

Infitting Type for Low Temperature Use

A single cellular rubber gasket encased in a moisture impervious skin provides the perfect plug-plus-surface seal. Uniform gasket compression is assured by Jamison E-Z-Open (Two-Point) Fastener (Pat. No. 2147794) in combination with Jamison "Adjustoflex" Hinges, (Pat. No. 2208310). To eliminate possible deterioration due to moisture precipitation the top of door is equipped with a metal cap—front, edges and casing are covered with No. 26 gauge galvanized steel sheet. The Lo-Temp Door satisfies the demand for a door of the infitting type for use in temperatures as low as minus twenty (—20°) Fahr.



Write for the new Jamison Catalog No. 175 that gives full information on these and other types of Jamison Cold Storage Doors.



*The Oldest and Largest
Builder of Cold Storage Doors in the World*

JAMISON COLD STORAGE DOOR CO. • HAGERSTOWN, MD.

EVERY **HENRY*** *Abso-Dry* DRIER

CARRIES THIS GUARANTEE



A HENRY DRIER
MUST PROVE ITS DRYNESS
WITH A

HISS

If it does not hiss,
your jobber will replace it
free of charge.

Every Henry Abso-Dry Drier with flare connections is pressure sealed with dehydrated air. When the flare nuts and seal bonnets are loosened at the time of installation, this air escapes with a hiss, indicating that the dehydrant is in factory-fresh condition and that the unit is free from leaks. THE ABSO-DRY PROCESS IS AN EXCLUSIVE HENRY PATENT.



In addition to the advantages offered by the Abso-Dry process, Henry gives you in most driers these additional features:

The Henry Abso-Dry process gives an on-the-job confidence that no other drier can give, an assurance that the dehydrant has maximum absorbing efficiency when installed in a refrigerating system.

1. A patented dispersion tube that exposes the entire volume of silica-gel to penetration by the refrigerant.
2. A patented dehydrant compression spring that reduces dehydrant abrasion.
3. A 30 x 250 mesh mesh filter that will not collapse under any ordinary system pressure.

4. Forged brass end cap construction with integral connections. Wide wrench flats.
5. Patented 8-Bolt distortion-proof flange design in cartridge type driers.
6. Silver brazed construction.
7. Polished and lacquered natural brass finish.
8. Driers with flare end connections furnished with flare nuts and seal bonnets.

ON YOUR NEXT JOB USE **HENRY*** *Abso-Dry* DRIERS AND NOTE THE DIFFERENCE

SOLD BY LEADING WHOLESALERS

HENRY VALVE CO.

Melrose Park, Ill. (Chicago Suburb) • Cable: HEVALCO Chicago.

* Registered U. S. Pat. Off.



Valves, Driers, Strainers, Control Devices and Accessories for Refrigeration and Air Conditioning and Industrial Applications.

BRUNNER
SINCE 1906

REFRIGERATION helps you serve better



REVOLUTIONS

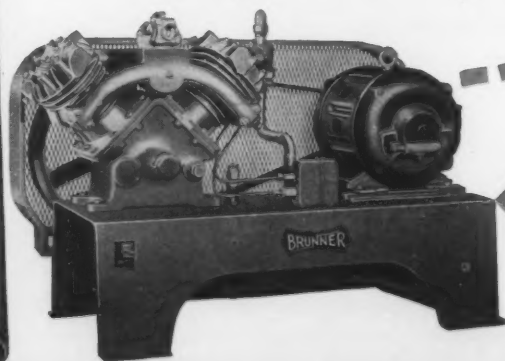
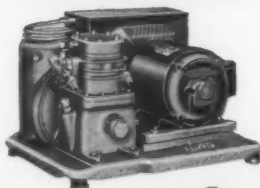
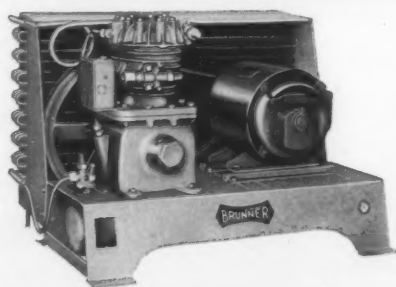
do affect your income

...particularly as they apply to refrigeration condensing units. If the compressor design is such that operating speeds are slower by comparison, less wear results. Less wear means *a longer period of high refrigeration efficiency*...and that is just about everything you have to sell to your customers.

All that makes high refrigeration efficiency is something Brunner factory representatives are *best* qualified to talk about...with facts and figures not to be denied.

BRUNNER MANUFACTURING CO.
Utica 1, New York, U.S.A.

● IF ANY PART OF YOUR BUSINESS has to do with the sale, recommendation or installation of refrigeration condensing units, then a meeting with a Brunner factory representative is called for. Write us...say when you'd like to see him.



**REFRIGERATION
CONDENSING UNITS**
...a size and type
for every purpose

BRUNNER
SINCE 1906

AIR AND WATER COOLED MODELS
1/4 HP. TO 30 HP.

ANSUL OIL

THE ALL-TEMPERATURE REFRIGERATION OIL

**Recommended for air conditioning
and refrigeration systems using
standard refrigerants.**

ANSUL OIL is an ALL-Temperature Refrigeration Oil which conforms to the rigid wax-free specifications established by Research. It will not separate wax when mixed with a refrigerant (under specified conditions) and subjected to temperatures as low as SEVENTY DEGREES BELOW ZERO (Fahrenheit).

ANSUL OIL has been machine tested for lubrication and wax-free characteristics in both high and low temperature installations. It is absolutely uniform . . . maintains high stability and has a low oxidation rate. It has proved suitable for ALL refrigerating systems using any of the standard refrigerants.

Ansul Research was first to recognize the problems resulting from low-temperature wax separation in oil-refrigerant mixtures. It realized the critical need for an oil which would not only lubricate and protect moving parts but would also eliminate the persistent troubles which were traced to wax-separation from oil-refrigerant mixtures.



*REG. U. S. PAT. OFF.



**ANSUL TESTED
FOR**
✓ **LOW MOISTURE**
✓ **LOW WAX**
✓ **HIGH STABILITY**

ANSUL 150 OIL —
The All-Temperature Refrigeration Oil — is sold by leading refrigeration wholesalers everywhere. (If you require a higher viscosity oil ask for ANSUL 300.) Get ANSUL OIL where you buy your Ansul sulfur dioxide and Ansul methyl chloride.

ANSUL CHEMICAL COMPANY
REFRIGERATION DIVISION, MARINETTE, WISCONSIN
ANSUL SULFUR DIOXIDE, ANSUL METHYL CHLORIDE, ANSUL OIL, KINETIC'S "FREONS"

COMPARE ^{the NEW} WABASH OVERSIZE Brass Dryers...



REFILLABLE



NON-REFILLABLE

ABOUT OVERSIZE DRYERS

Wabash Oversize Brass Dryers are provided with 2 cubic inches extra silica gel capacity over and above general field recommendations which are based on horse power ratings. For instance, Oversize Dryers for 1 H. P. systems have 14 cubic inches of gel or a full 2 cubic inches over other field recommendations. This extra silica gel provides reserve capacity to meet unusual conditions in the field. A real built in reserve for those hard to judge jobs and at no extra cost to you.

TRY ONE TODAY

Stop in at your wholesaler today and pick up a Wabash Oversize Brass Dryer. Compare its high quality all brass shell and large hex wrench grips. Remember that all joints are silver soldered, the outlet is equipped with a famous Poronze depth filter and it's filled with Davison's non-powdering, high pick up PA-100 silica gel. It is double tested under high pressures and fully guaranteed. Compare it for value too — truly America's low price, high quality dryer.

SERVICEMAN'S 30-DAY INTRODUCTORY OFFER

TRY OVERSIZE DRYERS

AND GET THIS HANDSOME PENLIGHT

WITH BATTERIES FOR ONLY

10¢

POSTPAID



GET THIS
Famous TRU-SPOT
PENLIGHT
COMPLETE WITH BATTERIES

- LIGHT WEIGHT HIGHLY-POLISHED ALUMINUM
- HAS GENUINE GE MAZDA (nipple type) BULB
- TRANSLUCENT RED MOULDED HEAD PIECE
- STAINLESS STEEL POCKET CLIP

For 10c, plus one box top from any WABASH OVERSIZE DRYER

WHAT TO DO

To get this handsome TRU-SPOT Penlight, just send us the box top showing the part number from any Wabash Oversize Brass Dryer and 10c in coin to cover the cost of mailing. The box top must show one of the following part numbers: 403, 404, 408, 409, 410, 411, 420, 421, 430, 431, 508, 509, 514, 515, 520, 521.

— LIMIT ONE TO A CUSTOMER —

THIS INTRODUCTORY OFFER
IS GOOD ONLY DURING MAY 1949

SAVE THIS COUPON

WABASH MANUFACTURING CO. Only the following part numbers qualify — 403, 404, 408, 409, 410, 411, 420, 421, 430, 431, 508, 509, 514, 515, 520, 521.
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CHICAGO 8, ILL.

Enclosed is 10c in coin and a box top showing the part number of a Wabash Oversize Brass Dryer. Please send me a TRU-SPOT Penlight, complete with batteries.

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ADDRESS.....

CITY.....STATE.....

THIS OFFER EXPIRES MAY 31, 1949

and AIR CONDITIONING • MAY, 1949

No "free ride" for oil with Carrier Compressors



No job is better than the equipment used in it. That's why you'll find it good business to install Carrier Compressors. Unlike the average unit, they won't let your customers down after a few months. They deliver efficient, low-cost refrigeration year after year.

Yes, where the average refrigeration system begins to bog down after a few months because oil gets into the coil to rob the refrigerant of its effectiveness, Carrier Compressors keep the oil in the crankcase where it belongs. It can't take a "free ride." Carrier Compressors accomplish this by a series of engineered steps, among them:

1 — An unusually large suction manifold. As oil, which is entrained in the refrigerant in small particles, enters the manifold its velocity is greatly reduced and oil particles separate from the mixture.

2 — A 90° turn in the gas flow. As the mixture takes this turn, additional oil particles are impinged on the side of the manifold. This oil — plus that separated previously — is returned to the crankcase via a drilled passage.

3 — An oil return check valve between the suction manifold and the crankcase. This valve assures the return of oil to the crankcase, and prevents its traveling from the crankcase back to the manifold.

For best results, install Carrier balanced refrigeration. That's a Carrier Compressor and a Carrier Cold Diffuser. These units are designed and built to work as a team and provide years of long, hard usage.

By relying on Carrier, you gain other important advantages. All the vast resources of Carrier, a leader in the field, are available to you. And, whenever you need expert technical advice on a tough problem, a Carrier-trained engineer will be glad to help you. Write today for Catalog OP16 on Carrier Compressors or CR241 on Carrier Cold Diffusers. Carrier Corporation, Syracuse, New York.

Carrier

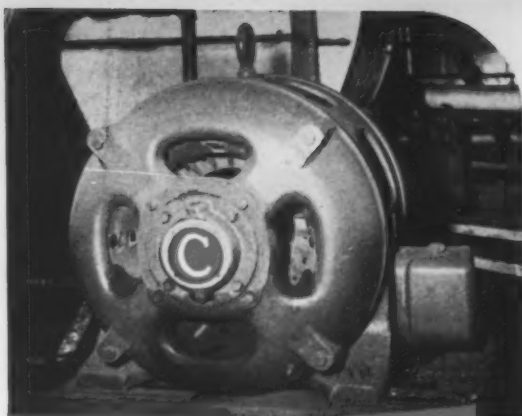
AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING

Century 40 horsepower, type SC motor driving an induced draft fan for a stack.

From

Century's

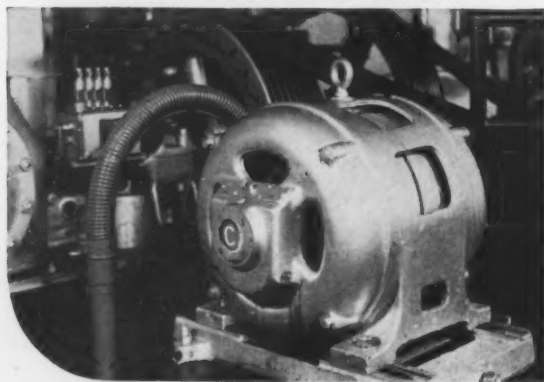
Line of Electric Motors You Can Select



- 1 Right Kind**—to match your current supply
- 2 Right Type**—to meet your load characteristics
- 3 Right Protection**—against atmospheric hazards
- 4 Right Size**—from 1/6 to 400 horsepower



Century 150 horsepower, type SC motor driving a two-stage centrifugal pump in a city water plant.



Two Century 75 horsepower SC high torque motors driving refrigeration compressors.

The wide range of kinds, types and sizes of Century motors makes it possible to select a standard motor to meet the requirements of all popular applications.

They are available for both AC and DC current—high, normal and low torque characteristics. Types are also available for applications requiring varying speeds and reversing direction of rotation.

To protect against atmospheric hazards, Century motors are enclosed in open rated drip proof, splashproof, totally enclosed fan cooled and explosion proof frames. Many types are available with vertical and flange mountings as well as standard horizontal bases.

Specify Century motors for all your electric power requirements.

Popular sizes and standard ratings are generally available from factory and branch office stocks.



CENTURY ELECTRIC CO.

1806 Pine Street, Saint Louis 3, Missouri
Offices and Stock Points in Principal Cities

Free

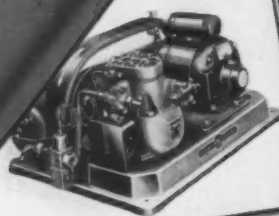
TO REFRIGERATION DEALERS
AND SERVICE ENGINEERS

quick selection of G-E Condensing Units

plus

HOW TO MAKE A COMPLETE
REFRIGERATION SURVEY

GENERAL ELECTRIC
Commercial Refrigeration



36 PAGES

CONVENIENT

New Pocket-Sized Manual!

Helps You Sell Condensing Units Faster and Easier!

AT LAST! A bright new sales tool to make condensing unit selection for commercial refrigeration applications a *simple, quick* job. You can't afford to be without it, because it cuts selection time and makes it possible to quote a price without engineering every job that comes up.

In a matter of seconds you can figure requirements, select equipment, and quote a price for a wide variety of commercial applications. This book has the short cuts. Best of all, it's free for the asking for dealers and service engineers. Use the quick selection tables to pick equipment for all kinds of display cases,

dairy refrigerators, vegetable cases, storage cabinets, and walk-in coolers. Use these tables to select condensing units for use with forced air cooling units or finned coils.

DETAILED METHOD, TOO. For more complex refrigeration jobs, the booklet contains a complete detailed selection method. Here you'll find tips on making a refrigeration survey, and information on required capacity, condensing units, refrigerant lines, unheated locations, and controls. It carries you through every step of detailed equipment selection. And there's valuable data on storage temperature and humidity.

PARTIAL CONTENTS:

- ★ When to use Quick Selection.
- ★ When to use Detailed Selection.
- ★ How to use Quick Selection Tables—plus simple examples.
- ★ 12 easy-to-use Quick Selection Tables.

- ★ Tips on making a complete survey.
- ★ Condensing unit tips.
- ★ Refrigerant line tips.
- ★ Data on unheated locations.
- ★ Complete step-by-step detailed method of selection.
- ★ Data on storage temperature and humidity.

DISPLAY CASE TABLE

STORAGE REFRIGERATOR TABLE

DETAILED SELECTION

Pocket-size. This book is designed to carry along when you call on prospects. It's 5½" x 7". All tables are laid out for quick, easy reference.

Easy to use. This booklet makes it possible for even non-technical personnel to select refrigeration equipment. Tables are simple to use, instructions are clear and concise.

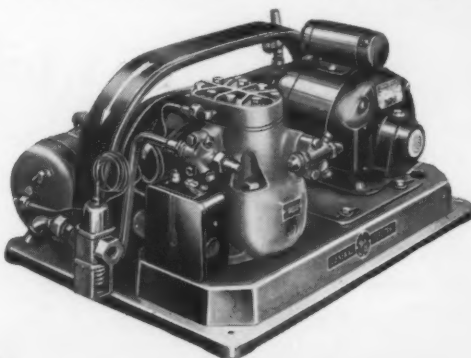
Faster selection. You use only one Quick Selection Table for each job. With only a few obvious facts you can pick required refrigeration capacity and the correct condensing unit model in a matter of seconds.

DON'T FORGET the profits you can make selling top-quality G-E Condensing Units and replacement parts. For condensed catalogs on units and parts, see your local G-E wholesaler-replacement parts depot.



condensing units

for dependable, economical commercial refrigeration



GENERAL



ELECTRIC

**Send for
your free copy
Today!**

**GENERAL ELECTRIC COMPANY, Air Conditioning Department,
Section CR-4 Bloomfield, New Jersey**

I am a ☐ service engineer ☐ dealer

Please send "Quick Selection of G-E Condensing Units." It is understood that I am under absolutely no obligation.

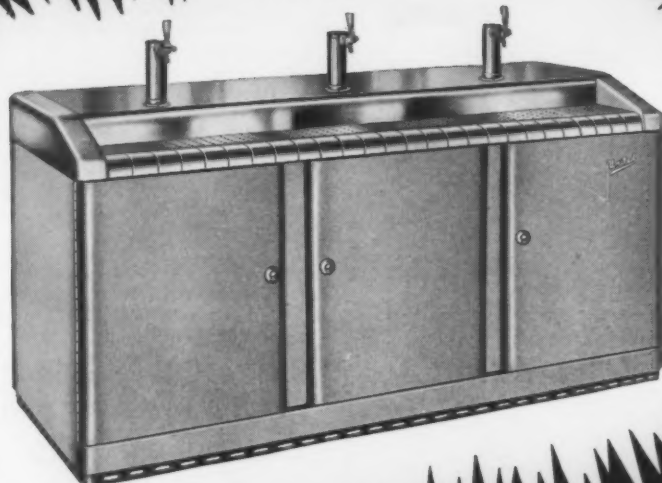
NAME.....

COMPANY.....

ADDRESS.....

CITY.....ZONE.....STATE.....

"RADIANT BEAUTY PLUS!"



5 YEAR WARRANTY
...on all hermetically
sealed refrigeration units.

United

IN THE NEW KOOLMASTER

Keg Cooler and Beer Dispenser

DESIGNED, ENGINEERED, MANUFACTURED - HUDSON, WISCONSIN

- Radiant beauty truly describes the New United Koolmaster . . . its brilliant stainless steel top contrasts most attractively with the soft brown du Pont Dulux long wearing baked enamel finish.
- Years of satisfying trouble-free service are assured, due to the ALL STEEL construction of the Koolmaster and the rigid testing this fine product is subjected to at the factory.
- The Koolmaster is also available in an all stainless steel exterior at a slightly higher price.
- Thermostatic control, custom designed cooling coils, efficient circulating blower and more than adequate extra-heavy insulation combine to insure a **CONSTANT 40°** temperature at all times.
- The Koolmaster is one of the first to make their self-contained condensing unit models a compact, one piece unit . . . gives greater space saving under back bar, more pleasing overall appearance.
- Two-keg and three-keg sizes designed with self-contained condensing units or for remote control.

*New... ADDED
CONVENIENCES*

New shiny chrome "push-button" door latches are built flush with cabinet, providing easy and safe access.

New full length concealed hinges are of heavy duty design for long trouble-free service.

Compare point for point . . . compare prices . . . and you'll buy United!

FOR FURTHER INFORMATION WRITE

UNITED REFRIGERATOR COMPANY • HUDSON, WISCONSIN

demand **DETROIT CERTIFIED VALVES and CONTROLS**

THE DETROIT LUBRICATOR COMPANY DETROIT

Certifies as to the reliability of any device of its manufacture and bearing its nameplate or monogram. The company certifies and guarantees such device, under normal use, to give reliable and trouble-free service when properly installed. If such device is found defective, it will be replaced under our standard guarantee or published replacement plans.

For more than 70 years the name **DETROIT** Lubricator Company has stood for quality beyond question. The certification of every **DETROIT** Control is your assurance of the continuation of this policy of building your business and our business on the firm foundation of complete customer satisfaction.



Look for this Certificate
— only Authorized
DETROIT Wholesalers
sell certified Controls.

Protecting YOUR Reputation—Maintaining OURS

DETROIT, famous for quality for over seventy years, now offers you the most aggressive and complete backing in its history. In addition to **DETROIT**'s great nation-wide distributing organizations and an exceptionally well qualified factory service group, every control in the **DETROIT** line is Certified. This means products you can sell with confidence because

they are built to give your customers the maximum in convenience, reliability and economy—greater satisfaction for users, added profit for you. The next time you order refrigeration valves and controls, specify **DETROIT**. For, only with **DETROIT** do you get the important plus value of this Certified Quality—protecting your reputation, maintaining ours.

DETROIT

LUBRICATOR COMPANY


5900 TRUMBULL AVE., DETROIT 8, MICHIGAN

Division of AMERICAN RADIATOR & Standard Sanitary Corporation

CANADIAN REPRESENTATIVES: RAILWAY & ENGINEERING
SPECIALTIES, LTD. — MONTREAL, TORONTO, WINNIPEG

DETROIT HEATING AND REFRIGERATION CONTROLS •
ENGINE SAFETY CONTROLS • FLOAT VALVES AND OIL
BURNER EQUIPMENT • **DETROIT** EXPANSION VALVES
AND REFRIGERATION ACCESSORIES • STATIONARY
LOCOMOTIVE LUBRICATORS

Serving home and industry. AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWAHNEE BOILER • ROSS HEATER • TONAWANDA IRON
and AIR CONDITIONING • MAY, 1949



Design

FOR ECONOMY

FOR UTILITY

FOR APPEARANCE

Industry is constantly finding new applications for aluminum and brass extrusions • There is no limit to the intricate designs we can produce in our modern plants • Let us show you how extruded shapes and products fabricated from extrusions can increase production and lower assembly costs.



EXTRUDED METALS DIVISION

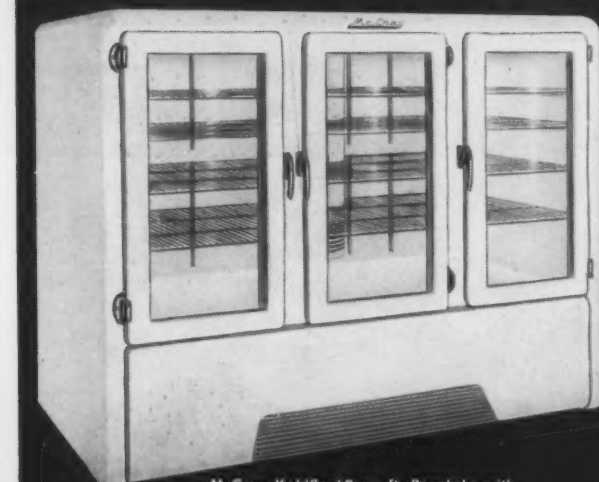
DETROIT GASKET & MANUFACTURING COMPANY

DETROIT 23, MICHIGAN

Now that the days of "order taking" are over . . .



McCray Koldflo 40 cu. ft. Reach-In with full-length service doors—8 adjustable, reinforced metal-bar shelves—self-contained, semi-hermetically sealed condensing unit.



McCray Koldflo 60 cu. ft. Reach-In with full-length glass service doors. Solid and glass door Reach-Ins available in 30, 40 and 60 cu. ft. sizes.

● Few dealers are sorry to see the passing of the "effortless sale"—especially those who handle McCray Koldflo refrigeration equipment.

You'll welcome competition with these new McCray Koldflo Reach-Ins because they really meet the needs of your customers. Every feature is a *service* feature. And when you add up the many McCray Koldflo advantages, you come up with a sales-making answer every time in efficient, low-cost refrigeration!

Remember, your customers' trade publications are continuing to drive home the hard-selling McCray Koldflo story with a year-round schedule of advertisements. Follow up these "door openers" for an easy-to-make sale. *Clip and mail the coupon* below for extra sales ammunition on McCray Koldflos, your best source of refrigeration profits.

THE BEST IN
LOW-COST REFRIGERATION

McCray

KOLD FLO

McCray Refrigerator Company,
996 McCray Court, Kendallville, Indiana

Please send me complete information on the line of
McCray Koldflo Reach-In Refrigerators, Walk-In
Coolers, and Display Cases.

NAME

ADDRESS

CITY ZONE STATE

HERE'S THE FOUNDATION OF
a Complete V-Belt Department
in one compact service unit



You don't have to carry large stocks of many sizes of V-Belts to meet the needs of your customers. The New Gilmer #355 Assortment of 50 Refrigerator V-Belts will enable you to supply all the most frequently called-for sizes. And with this assortment are included valuable servicing and merchandising aids together with a handy, 8-hook Metal Rack for mounting on wall of shop or inside panel of service truck.

Gilmer V-Belts assure accurate fit, firm grip and pulling power. Cords are normalized to resist stretch, and sturdy jackets provide long life.

Your Gilmer Distributor carries a complete stock of Gilmer V-Belts. Send him your order today for the new #355 Assortment. Total cost, \$43.90. Belts sell for \$73.16, earning you a net profit of \$29.26.

ASSORTMENT #355 CONSISTS OF

1. 50 Assorted V-Belts
2. 8-hook Metal Wall Rack
3. Gilmer Handimeter (patented) for quick measuring of belts
4. Gilmer V-Belt Catalog, "America's Belt Bible"
5. Inventory Card
6. Attractive Window Display Card



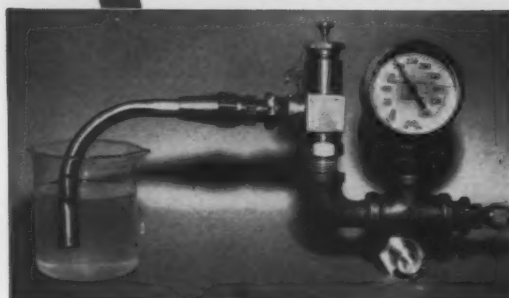
L. H. GILMER COMPANY

Tacony, Philadelphia 35, Pa.

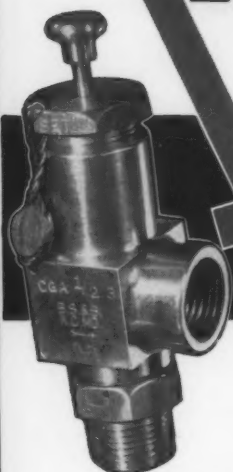
Division of United States Rubber Company

Even after "repeated popping"...

HOLDS FREON WITHOUT LEAKING!



Unretouched photo of BS&B Freon Relief Valve during bubble test. No trace of leakage at 200 lbs. Freon pressure (valve setting 225 lbs.)



THE NEW **BS&B** FREON RELIEF VALVE

You've needed such a relief valve for a long time. Now the precision craftsmen of Black, Sivalls & Bryson are producing it... in large quantities!

Relieves refrigeration systems from pressure rises... re-sets tightly to prevent loss of expensive Freon. Again and again the BS&B Freon Relief Valve has been "popped". Even after as many as 200 times, no trace of leakage is evident.

This valve will function properly with SAFETY HEAD rupture disc device on outlet. (See ASME Unfired Pressure Vessel Code, Par. U10-b).

This BS&B Valve is a quality product... engineered to close tolerances, precise in its action. Ideal for installation on medium and large systems. Approved by City of Chicago Refrigeration Inspection Dept. for installation in that city, with or without SAFETY HEAD. Furnished with 1/4, 3/8 and 1/2-inch pipe thread inlet.

Manufacturers, Jobbers—
attractive discounts are provided for large quantity purchases. Write, wire today.

BS&B
FREON
RELIEF VALVE

Special Products Division, Section FV-11
BLACK, SIVALLS & BRYSON, INC.
Power and Light Building, Kansas City 6, Mo.

- ☐ Send full details of the new BS&B Freon Relief Valve.
- ☐ Send quantity discount information.
- ☐ Please have Sales Engineer call.
- I am a ☐ Equip. Manufacturer ☐ Jobber
- ☐ Distributor ☐ Supply Company

Name.....
Firm.....
Street.....
City..... Zone.... State.....

THE LATEST BOOK ON REFRIGERATION REPAIR



Pocket size—4 3/4" x 7 1/4". Limp Binding. 704 pages. \$5.00 each.

Every repair man and owner should have this book at hand for ready reference. Written by Edward R. Magnus, a recognized authority and consulting engineer on refrigeration, the book contains 21 reference tables and 139 line illustrations. Servicing instructions follow a logical pattern in which the problem is presented, the equipment necessary is listed, general instructions follow, and the operation is completed with a short paragraph on precautions to be observed in making the repair.

The Refrigerating Engineering Magazine says: "... We recommend the REFRIGERATION SERVICEMAN'S MANUAL to the practical engineer, technician, or student without reservation."

USED AS A TEXTBOOK IN 18 LARGE REFRIGERATION SCHOOLS

PUBLISHED BY
WILCOX & FOLLETT CO.
CHICAGO NEW YORK



Note to Jobbers: For a short time only on an order of ten or more copies of this book we will include a handy counter-display rack as pictured.

SEND FOR YOUR COPIES TODAY.

Wilcox & Follett Co.
Dept. Rt 49, 1255 S. Wabash Ave.
Chicago 5, Illinois
Please send me _____ copies of the
REFRIGERATION SERVICEMAN'S MANUAL.

Name _____

Street Address & Zone _____

City & State _____

Include display rack ☐

LETTERS

Thank You, Kind Sirs!

EDITOR:

CONGRATULATIONS TO COMMERCIAL REFRIGERATION AND AIR CONDITIONING ON YOUR NEW NAME AND BROADENED SCOPE OF SERVICE TO OUR INDUSTRY.—T. H. MABLEY, MECHANICAL HEAT AND COLD, INC., DETROIT, MICH.

EDITOR:

Congratulations on your new format and name, COMMERCIAL REFRIGERATION AND AIR CONDITIONING. It surely lends a better pitch to the air conditioning end of the business.—A. F. Ward, Director, Packaged Cooling Sales, Chrysler Corp., Airtemp Division.

Need Some Tubing Formed?

EDITOR:

We are trying to locate the full name and address of the "Swan" Company that specializes in the forming of copper tubing.

We have seen this company's advertisements but we cannot locate their full name and address, and would appreciate your advising us if you have it available.—Lyman B. Betz, Betz Corp., Hammond, Ind.

The name and address are as follows: Swan Engineering Co. Inc., 22 Nelson St., Bloomfield, N. J.—Editor.

Wants to Build Own Home Freezer

EDITOR:

For the past three years I have enjoyed THE REFRIGERATION INDUSTRY through the courtesy of Henry V. Dick & Company, Inc., Charlotte, N. C.

I think that in one of your issues you had a drawing of a home-made freezer. For some reason I cannot locate the issue with the drawing.

Could you give me a drawing of a good home freezer that can be built without too much expense? Or could you give me the address of someone that I may contact to get this drawing?

I have a good unit that I could use. I am a serviceman for Frigidaire here in Chester. Thanking you for any help you can give me, I remain,—J. H. White, R.#3, Chester, S. C.

We do not recall having published any such information in our magazine, but a bulletin on how to build a home freezer has been published by the New York State College of Agriculture, Cornell University, Ithaca, N. Y. If you will write to L. R.

Simons, Director of Extension, and request a copy of Cornell Extension Bulletin 705, it may give you much of the information which you desire.—Editor.

Desiccant Article Arouses Still More Interest

EDITOR:

Please send information on "Notes on the Efficiency of Drying Agents."—Foster Brandon, Tyler Fixture Corp., Niles, Mich.

An article entitled "Notes on the Efficiency of Drying Agents" appeared in our September 1948 issue.

If you would like additional information on this subject our suggestion would be that you get in touch with the author, S. H. Crampton, who is associated with Highside Chemicals Co., 195 Verona Ave., Newark 4, N. J.—Editor.

Looking for a Good Service Manual?

EDITOR:

Can you please advise me as to where I can get a Serviceman's Manual or a book that can tell me the function of a refrigerating system and its symptoms?

I have seen and read your magazine THE REFRIGERATION INDUSTRY and thought maybe you could help me out.

I would appreciate your helping me out very much, and hope that you will be able to tell me.—H. M. Boesch, Brooklyn 10, N. Y.

See advertisement on this page.—Editor.

Who Makes "Frost Queen"

EDITOR:

At the request of your New York office I am writing to you to ask if you know the name of the company who manufactures the home refrigerator by the name of "Frost Queen." They were located on Long Island and have since moved to New Jersey.

Also, would like to have a list of manufacturers of home units, electric, gas and oil. Thank you in advance.—L. H. Berry, L. H. Berry & Associates, Brooklyn, N. Y.

According to our records the "Frost Queen" unit is made by Precision Utilities Mfg. Corp., Rockaway Beach, N. Y. We do not have any other address for this company and you may be quite right in your statement that they are no longer located at that address but have moved to New Jersey.—Editor.



**HAVE YOU
TRIED
THEM?**



NEW! DIFFERENT!

McINTIRE DC FILTER-DRIERS

means **Double Capacity**

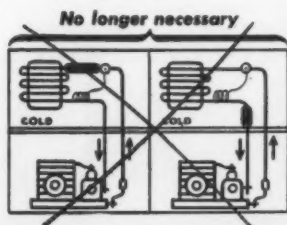
DOUBLE CAPACITY—RESERVE CAPACITY

Saves callbacks... Saves cost

LIQUID LINE INSTALLATION

*Regardless of line
temperature to 150°F.*

*No need to install
in cold place.*



FIRST PASS DRYING to -60° dew point. . . No repeated warming of valves or cycling necessary.

PROGRESSIVE FILTERING. Clean system — Free Flow.

Buy from your wholesaler.

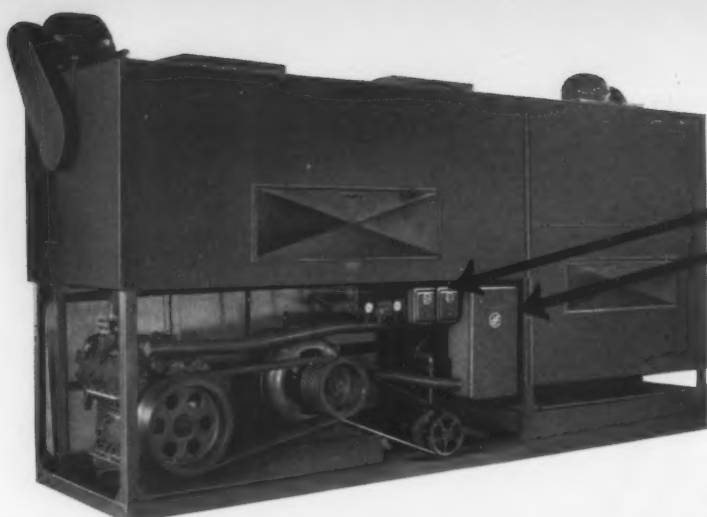
MADE by the
MAKERS of



MOISTURE INDICATORS and
MOISTURE CONTROL UNITS

McINTIRE CONNECTOR COMPANY

205 Jefferson St., Newark 5, N. J.



Bulletin 709 Size 1 Starters

Bulletin 709 Size 4 Starter

40-ton Governair air-conditioning unit in building of Civil Aeronautics Administration, Miami, Florida. It has two A-B Bulletin 709 Size 1 starters and one A-B Bulletin 709 Size 4 starter.

GOVERNAIR

AIR-CONDITIONERS

equipped with

Trouble-Free Motor Controls



Allen-Bradley Bulletin 709 Size 4 solenoid starter. Reliable . . . Compact . . . Double-break silver-alloy contacts . . . No contact maintenance.



Allen-Bradley Bulletin 709 Size 1 solenoid starter. The solenoid construction is simple and trouble free.

WHY ARE ALLEN-BRADLEY STARTERS SO POPULAR for Air-Conditioning Service? . . . Because they are trouble free. Only one moving part. No pivots, pins, or bearings to corrode or stick . . . no jumpers to break. You install them . . . and forget them!

NO CONTACT MAINTENANCE. Allen-Bradley patented silver alloy contacts never need cleaning, filing, or dressing.

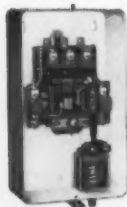
DEPENDABLE OVERLOAD RELAYS. Allen-Bradley thermal relays are accurate and dependable even after long service.

The A-B trademark stands for millions of trouble-free operations.

Allen-Bradley Co., 1340 S. Second St., Milwaukee 4, Wisconsin.

ALLEN-BRADLEY AIR-CONDITIONING AND REFRIGERATION CONTROLS

PRESSURE AND TEMPERATURE CONTROLS

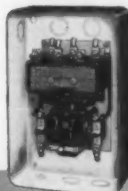


High-pressure cutout and motor starter in same enclosure. Temperature controls can be mounted with motor starter in same way.

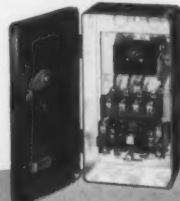
MANUAL STARTER



AUTOMATIC STARTER



COMBINATION STARTER



HEAVY COMPRESSION STARTER



ALLEN-BRADLEY
SOLENOID MOTOR CONTROL

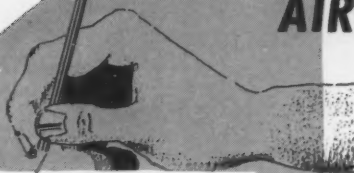


SPECIFY...

Curtis

95 Years of Successful Manufacturing

AIR-CONDITIONING UNITS



Compact, attractive units...
3, 5, 7½, 10 and 15 tons.

Curtis

95 Years of Successful Manufacturing
REFRIGERATING DIVISION OF
CURTIS MANUFACTURING COMPANY
1915 Kienlen Ave. • St. Louis 20, Missouri

Assure

Easy Installation

Trouble-Free Operation

Longer Life

Sound engineering and proven precision manufacturing are your guarantee that Curtis air-conditioning equipment will be a source of complete satisfaction to everyone concerned:

Architects

Engineers

Contractors

and Users

In thousands of installations throughout the world, meeting a wide variety of requirements, Curtis equipment is giving trouble-free service to satisfied users, and has for many years.

Specify Curtis and get these advantages:

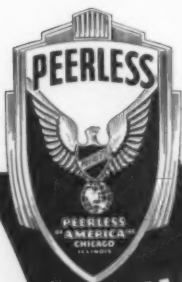
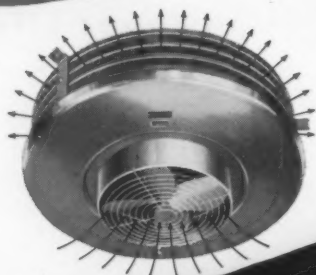
- One day installation
- Cooling, dehumidifying, circulating and filtering air
- Easily adapted for heating
- Quiet, dependable operation
- Finger-tip control
- Completely assembled at the factory

Write for full information on Curtis equipment for any air-conditioning or refrigeration need.

R 49-4A



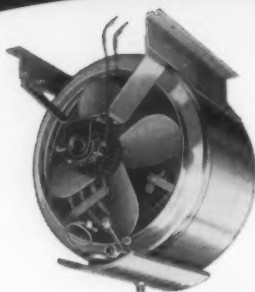
STANDARD DOME COOLERS
WITH AIR EMITTING IN ALL
DIRECTIONS.



**PEERLESS 1949
MOTOR DRIVEN COOLING COILS
ARE BETTER THAN EVER**



FRONT VIEW



BACK VIEW

Send for Bulletin No.
49-M Giving Prices
and Specifications

DOME COOLER

An ideal PEERLESS unit for high humidity cooling in reach-in and walk-in applications is provided in the DOME COOLER. Air is drawn up in the center of this unit and then discharged horizontally along the fixture ceiling to drop down the side walls. Installation is a simple operation and the unit is a space saver. Complete with built-in heat exchanger.

UNIT COOLER

Completely adaptable for walk-in coolers and all types of fixtures, the UNIT COOLER delivers maximum cooling at minimum cost because it is equipped with the famous PEERLESS "PIE PLATE" Coil. In the "PIE PLATE" all primary and secondary surface, including return bends, is in the air stream. There is no waste surface. Easy installation. Complete with built-in heat exchanger.

PEERLESS of AMERICA, Inc. 2901 LAWRENCE AVE., CHICAGO 25, ILLINOIS

Why not Profit from Experiences of others?



"You're always sure of easy installation, good results, with genuine precision-built Frigidaire Service Parts," says E. Mason, of Shirar-Young Corp., 1450 Van Ness Ave., San Francisco, Calif.



"It's a better job with Frigidaire Parts. Both our customers and servicemen prefer them," says J. H. Frantum, of Columbia Refrigeration Service, 3324 M Street, N. W., Washington, D. C.



"For best service, we use genuine precision-built Frigidaire Service Parts. They're high-quality, dependable service parts," says Ned Brown, of A. A. Doerr Mercantile Co., Larned, Kansas.

Frigidaire Service Parts mean Good Business For You!

FRIGIDAIRE "YL" SWITCHES

Famous For Accurate, Dependable Control



Ruggedly built for heavy duty and long life, Frigidaire "YL" Switches give operating results that help your reputation for dependable service work. These switches are fast-acting, fully automatic, and their greater load-handling capacity—result of a unique operating mechanism—has resulted in high ratings with Underwriters' Laboratories.

Frigidaire "YL" Switches are easy to install—readily adaptable to almost any job. They can be mounted in any position and used to control either single phase, polyphase, or D. C. motors. Each model is applicable to a wide range of temperatures and can be used with Freon 12, SO₂, or methyl chloride refrigerants.

FRIGIDAIRE

Parts and Accessories



FREE! Frigidaire Parts Catalog. For full information about all Frigidaire service parts, write for your free Frigidaire "Parts" Catalog today.



FRIGIDAIRE DIVISION
General Motors Corporation
1365 Amelia Street, Dayton 1, Ohio
Please rush my free copy of your new parts catalog—
"Genuine Precision-Built Frigidaire Parts and Accessories."

Name _____
Firm Name _____
Address _____
City _____ County _____ State _____

Going Places!

NIBCO adapters — wrot from tubes — are setting the pace in the industry because they help speed the job and insure quality copper tube installations. By an exclusive process NIBCO adapters are formed from straight sections of 85% Red Brass pipe — not machined from bar stock. They provide exceptional corrosion resistance; strength; tough, perfectly formed threads; husky wrench hexes. Minimum time is required to make the solder joint because little heat reaches the threaded section. Low in cost, high in quality NIBCO 85% Red Brass Wrot adapters are perfect team mates for NIBCO Wrot Copper fittings. **Write now for Catalog F** containing complete information for specifying and ordering the newest and best fittings and valves for copper tube installations. You'll profit by standardizing on NIBCO fittings.



Range of 1/4" to 2" in straight sizes and many reducing sizes are available.

- | | |
|---|--|
| <p>1
Made from tube</p> <p>2
Entire fitting wrot or forged</p> <p>3
85% Red Brass pipe</p> <p>4
Perfectly formed threads</p> <p>5
Husky wrench hexes</p> <p>6
Manufactured to A.S.A. standards throughout</p> | <p>7
Thickness of cup approximately equal to that of the tube, making soldering quicker, more foolproof</p> <p>8
Cup extended away from threads. Comparatively little heat transferred into threaded section</p> <p>9
Low initial cost</p> <p>10
Range of sizes — 1/4" to 2"</p> |
|---|--|

NIBCO

ADAPTERS

Wrot From Tubes

NORTHERN INDIANA BRASS CO.,

514 Plum Street, Elkhart, Indiana

EXCLUSIVE, PATENTED FEATURES MAKE

KOLD-HOLD

TRUCK PLATES

THE MOST

dependable known



NO CASE OF OPERATIONAL FAILURE EVER REPORTED

When you buy Kold-Hold Refrigeration Plates for your truck, you can count on a lifetime of low cost, highly efficient refrigeration. For, with over one-half million Kold-Hold plates in use today, there has never been a case of operational failure reported. Trucks equipped with Kold-Hold Plates have been subjected to the most severe operating conditions possible, in all types of trucks. And never yet have they failed to provide the refrigeration needed.

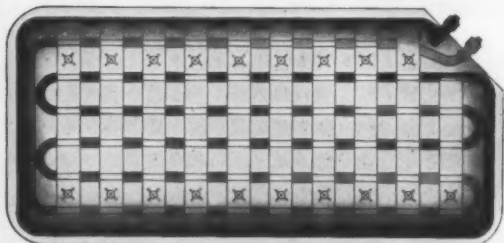
"PERIMETER FREEZING" ELIMINATES OPERATIONAL FAILURES

The extra long life of Kold-Hold Plates is due to exclusive design features which eliminate the operational failures found in conventional plate design. In Kold-Hold Plates, the refrigerant passes through tubing along the outer edges of the plate first . . . before it reaches the center. (See drawings below.) As a result the outer edges freeze first and the strain caused by the expansion of the eutectic is placed on the center and strongest part of the plate.

DUE TO THIS PATENTED METHOD OF CON-

STRUCTION WHICH RESULTS IN THE PERIMETER FREEZING FIRST, KOLD-HOLD TRUCK PLATES CANNOT SPOIL YOUR TRUCK LOAD, THROUGH MECHANICAL FAILURE.

There are other patented features which help make the Kold-Hold Truck Plate the most dependable on the market today. The streamlined design and rounded corners provide extra strength where it's needed most. There's no chance for ice to cake over the end.



The drawing at the left shows how the tubing carries the refrigeration all around the outer edges of a Kold-Hold Plate before going into the center. This takes the strain off the edges. The end view shows how the center of a Kold-Hold Plate "gives" as the eutectic freezes and expands. In conventional plate designs, the center freezes and places excessive strain on the edges.

NEW CATALOG, JUST OFF THE PRESS

Send today for your free copy of this completely new catalog which explains the many advantages of Kold-Hold Plates.



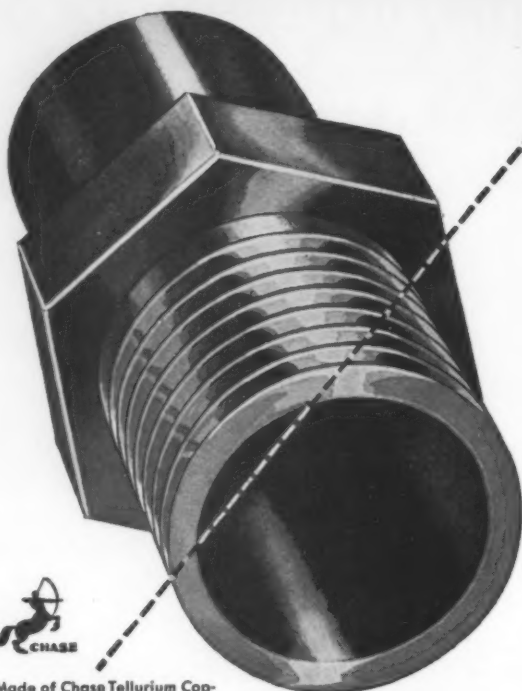
KOLD-HOLD

Jobbers in Principal Cities

PROCESSING **TRANSPORTATION**
protects every step of the way

STORAGE

KOLD-HOLD MANUFACTURING COMPANY • 503 E. HAZEL STREET, LANSING 4, MICHIGAN
and AIR CONDITIONING • MAY, 1949



*Made of Chase Tellurium Copper, a patented copper alloy of remarkable machinability that takes clean-cut threads. U. S. Pat. No. 2,027,807.

CHASE *COPPER SOLDER-JOINT FITTING ADAPTERS

Have
SO₂
THREADS!

WITH SO₂ threads in sizes through 1" nominal, Chase Copper Tube Adapters are made of Tellurium Copper and designed for greater strength and resistance to deformation caused by wrench stresses. Tellurium Copper is a special copper alloy developed by Chase that possesses excellent machinability and gives Chase adapters the uniform threads that mean tighter, leakproof joints.

Remember, also, that Chase Copper Refrigerator Tube is *extra soft* for easier handling, and for faster installations. And that Chase Wrought Copper Fittings are sound and non-porous and made *to fit* the tube accurately!

For better installations call your Chase Distributor today and ask for Chase Copper Refrigerator Tube and Wrought Copper Solder-Joint Fittings.



Chase Copper Refrigerator
Tube and Fittings give you

TIGHTER JOINTS! EXTRA STRENGTH!
To find out more about Chase Copper
Refrigerator Tube and Solder-Joint Fittings
send for literature to Dept. RI-59.

Chase



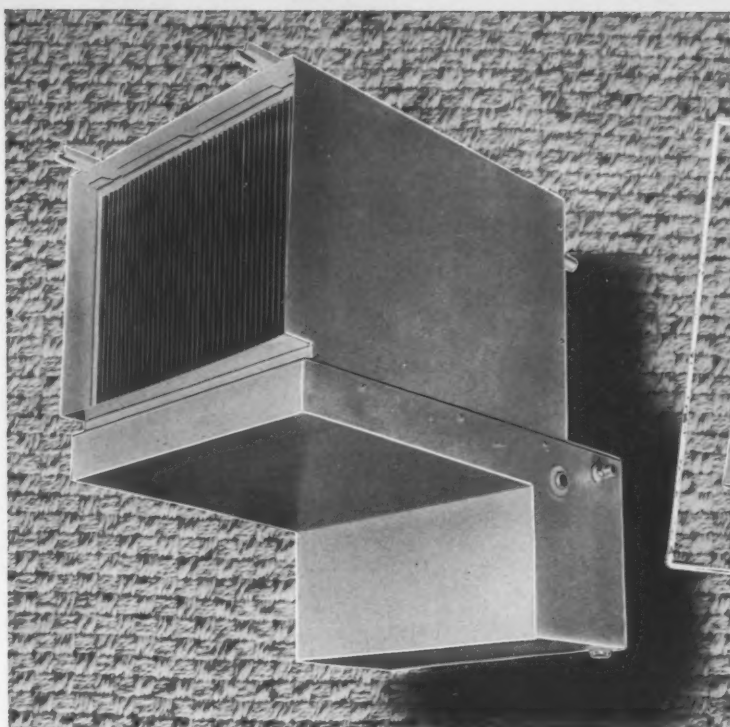
the Nation's Headquarters for
BRASS & COPPER

WATERBURY 20 CONNECTICUT

SUBSIDIARY OF KENNECOTT COPPER CORPORATION

THIS IS THE CHASE NETWORK . . . handiest way to buy brass

ALBANY: ATLANTA BALTIMORE BOSTON CHICAGO CINCINNATI CLEVELAND DALLAS DETROIT HOUSTON INDIANAPOLIS KANSAS CITY, MO. LOS ANGELES MILWAUKEE
MINNEAPOLIS NEWARK NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH PROVIDENCE ROCHESTER ST. LOUIS SAN FRANCISCO SEATTLE WATERBURY (Sales Office Only)



Rear View

THE
REALLY

NEW

EVAPORATIVE CONDENSER

by **KRAMER**

OPENS OPPORTUNITIES IN THE SMALL TONNAGE FIELD!

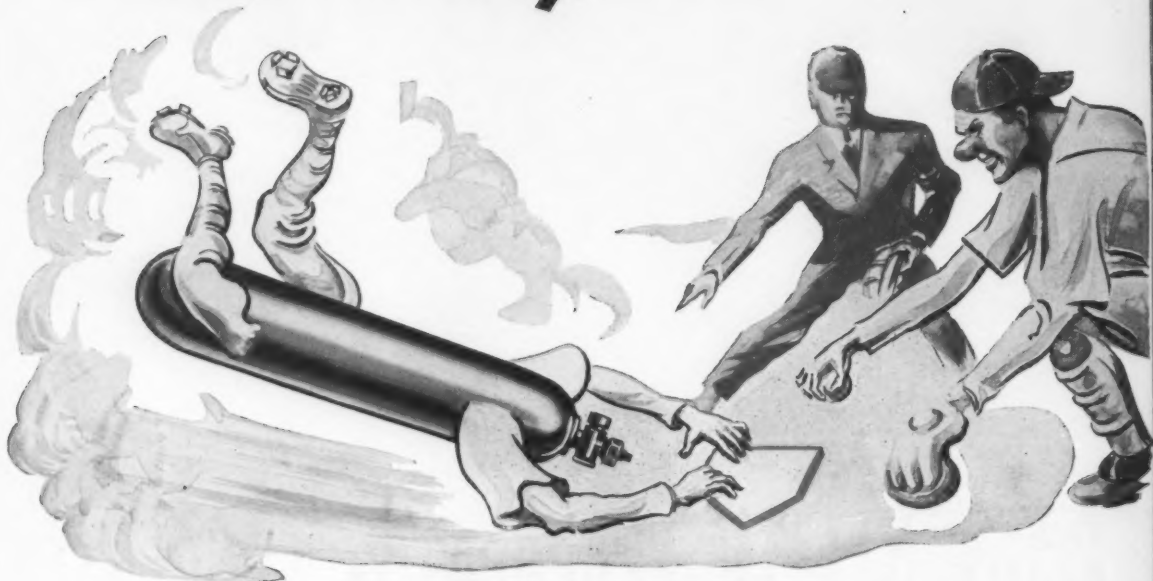
Small Capacities - 2 to 8 tons ● Single or Multi - Circuits
Stainless Steel Sump ● Extra Large Water Delivery
New Type Packless and Greaseless Pump ● Bare Tube
Coils ● No Nozzles ● No Belts ● Low Cost ● For Freon,
Methyl and Ammonia

WRITE FOR BULLETIN R162B

KRAMER TRENTON CO. *Trenton 5, N. J.*

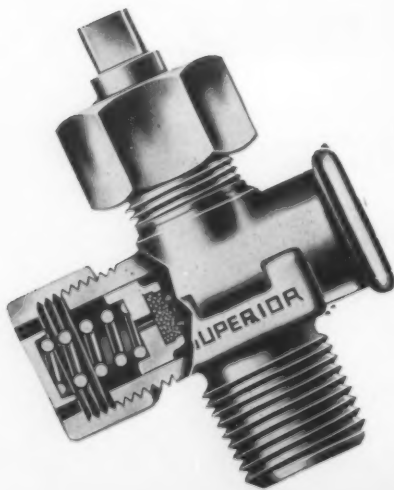
THEMOBANK - COOLMASTER - RADIAL UNITS - PANEL UNITS - CUBERS - FINNED COILS - BARE TUBE COILS - HEAT INTERCHANGERS -
CONDENSERS Air Cooled, Water Cooled, Evaporative - WATER COOLING EVAPORATORS - BLAST COOLING COILS - BLAST HEATING COILS.

You'll be **SAFE** ALL-ways...



if you have . . .

THE *New* SUPERIOR Type 1281 Valve on your service cylinders



Here's another SUPERIOR "First"—a small service cylinder valve, incorporating a spring-loaded safety device—set to relieve excessive pressures caused by *heat or overfilling*—reseals at normal pressures, saving refrigerant and reducing hazard.

Recommended for 5 and 10 pound cylinders, for use with any type of refrigerant.

Why not specify SUPERIOR type 1281 valves when you order service cylinders from your Wholesaler . . . and be sure to use them for all replacements. You'll be **SAFE** all-ways!

Ask your Wholesaler for further details

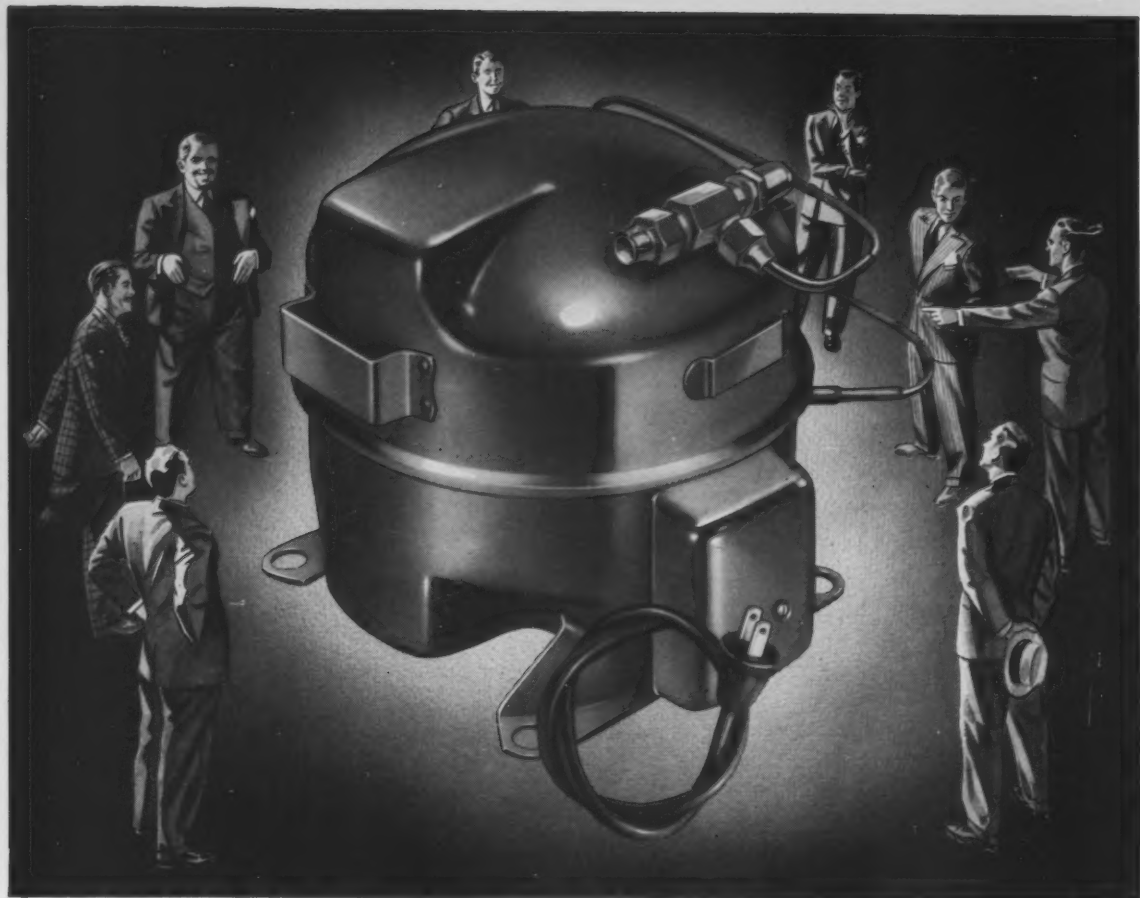
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Superior

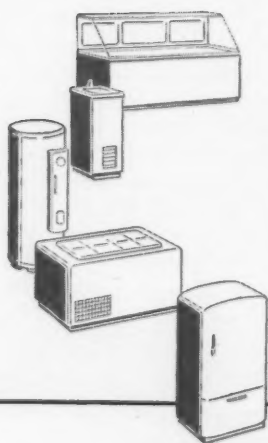
Valve and Fittings Co.



1509 WEST LIBERTY AVE. PITTSBURGH 26, PENNA.



Looks good from all angles!



No matter how you look at Tecumseh Hermetic Compressors . . . whether with an eye for design, engineering, construction, or high operating efficiency . . . you'll find them clear-cut leaders on all counts for any application within their range. They're smooth, quiet, dependable in operation . . . precision built throughout to assure long-life, trouble-free performance. And important, too, from a cost point of view, they're available to manufacturers of complete products, or they can be supplied on high-sides or incorporated in completely sealed systems. So get the facts . . . all the facts on Tecumseh Hermetic Compressors. Single and twin cylinder models . . . $\frac{1}{8}$ to $\frac{1}{2}$ horsepower . . . Freon 12 or Freon 22 . . . for a wide range of domestic and commercial applications. Write today for complete information.

Chieftain



TECUMSEH PRODUCTS COMPANY

Tecumseh, Michigan

Export Department, 2111 Woodward Avenue, Detroit 1, Mich.

FOR FAST, POSITIVE DEFROSTING

New Penn Series 321 Automatic Hot Gas Defroster

THIS SINGLE-UNIT CONTROL
DOES THE JOB - - -

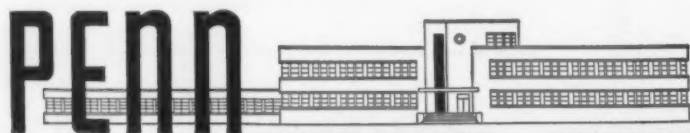


● Now you can get a completely automatic unit for fast defrosting of commercial evaporators. It's Penn's new Series 321 Automatic Hot Gas Defroster. And it works like this. A self-starting synchronous motor operates a mechanical valve to direct hot gases straight into evaporator coils. This valve is heavily spring loaded for *positive* seating. At the same time the motor closes a heavy duty two-pole switch to start the compressor. Other contacts will shut off a fan if this is desired. Defrosting is fast. There's little change in temperature of stored products.

Penn Series 321 Automatic Hot Gas Defroster is recommended for both self-contained and remote type

installations up to 2 h.p. It can be used with most types of evaporators where drains are available and where stored products don't touch evaporator surfaces.

These defrosters are rugged and dependable. They've been thoroughly field tested on hundreds of commercial applications. In every instance they've done a job and made friends. The Penn Series 321 Hot Gas Defroster can do a job for you, too. See your refrigeration jobber or write today for full details including wiring and piping diagrams. **Penn Electric Switch Co., Goshen, Indiana.** Export Division: 13 E. 40th Street, New York 16, N. Y., U. S. A. In Canada: Penn Controls Ltd., Toronto, Ontario.



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES



I AM AN AMERICAN

QUITE a statement, brother! And it covers a wide bracket of folks in all ranks.

Ours is the freedom to pick and choose. Not just goods in stores but the good in life. Men with big ideas and the guts to carry them out can climb high. Others with more moderate ambitions can pick and choose their jobs, professions or trades and live simpler . . . but amazingly comfortable . . . lives. Ours is the freedom to worship as we choose. Ours is the freedom to say what we think, to do as we please.

Even the happy hobo is an example. The open road, the companionship of the "jungle," the backdoor panhandling, and the scrupulous avoidance of work are his choice. Nobody has the right to pop him in jail or chain him to a job. As long as he's an innocent hobo, he's free as the air. He's an American, too.

On May 15th comes "I Am An American Day." Why specialize on a day? We ought to be whooping it up and cheering hoarsely most of the time. And we *would* if we counted our American blessings . . . all the big and little freedoms won and held for us by 16 generations of those who went before.

Be in the front row on May 15 cheering "I Am An American" till the rafters ring. Look for me . . . I'll be there.



PERFECT RECORD FOR 23 YEARS

**Suniso Refrigeration Oils Prove Absolutely Trouble-Free
for Service Shop, One Unit Running on Same Oil Since 1926**

No lubrication trouble in 23 years while using Suniso Oils—that has been the experience of a large commercial refrigeration service shop.

Starting in 1926, this big-city concern has grown so large that it now keeps 20 men busy. On the premises alone it services some 750 units a year. No oils but Suniso have ever been used except for occasional periods during the war when Suniso sometimes was not immediately obtainable. The only

lubrication trouble ever experienced was with these substitutes. One domestic unit has been running on Suniso for 13 years without an oil change; and another for 23 years. The service manager says that Suniso Refrigeration Oils have definitely contributed to building up this fine business and making it profitable.

This is the kind of performance that servicemen everywhere have learned to expect from Suniso Oils.

Another measure of their quality is the fact that Suniso Oils are the predominant choice of equipment manufacturers in the refrigeration and air-conditioning field. Suniso is available in different grades. Each has an exceptionally low pour-point and wax-separation point, exceptionally high dielectric strength and resistance to chemical change when mixed with Freon or other modern refrigerants. Ask your jobber for free Suniso specification card.

SUN OIL COMPANY • Philadelphia 3, Pa.

*In Canada: Sun Oil Company, Ltd.
Toronto and Montreal*

SUNISO REFRIGERATION OILS

"JOB PROVED" THROUGHOUT THE INDUSTRY



BTU

News • Laws • Trends

Frozen Foods Stage Big Comeback

BOLSTERED by frozen orange juice concentrate, the frozen food sensation of 1948, the frozen food industry last year came off the ropes (where it had been knocked by the nightmare sales slump of 1947) to chalk up a new all-time sales record in 1948 and to set its sights on an even bigger and better 1949. These facts came to light when the industry held its annual convention in Chicago.

Sharing credit along with frozen orange juice for the industry's encouraging revival was the elimination from the field of many of the irresponsible fly-by-night packers which had jumped into the business in the early post-war period, and the consequent improvement of over-all product quality with its accompanying return of consumer confidence.

Total sales of the frozen food industry in 1948 came to about 1¼ billion pounds, it was reported, which was a gain of about 12% over the preceding year. Any really big sales growth, it was indicated, currently is limited by the industry's storage and distribution capacity—all the way from retail outlets back to the packers.

Biggest bottleneck—and here's the point of particular interest to merchandisers of commercial refrigeration equipment—still is at the retail level. Shopkeepers, especially the small independents, are lagging behind the parade when it comes to the installation of low temperature display cases. Who could ask for a more promising sales opportunity?

Yes, We Do Have Bananas

A NEW confection, frozen bananas, now is ready for a nationwide market, according to Nat Richards, head of a Chicago company known as Choco-bana, Inc. Richards explains that the knack of freezing a banana and coating it with chocolate was discovered three years ago with assistance of a group of students and professors at the University of Illinois.

The company introduced the product a year ago, and an appeal test conducted in a motion picture theater seating some 500 children was an overwhelming success. The company now turns out 400,000 frozen, chocolate coated bananas a week in its Tampa, Fla., plant. The dipping machine can handle 1,200 bananas an hour.

Plastics Pass For Metals

DEVELOPMENT of two new metallic colors in Lustrex polystyrene, closely simulating bronze and aluminum and combining low cost with improved moldability, has been announced by Monsanto Chemical Co. Considered of vital importance to manufacturers hard pressed for metal, these two metallic Lustrex colors are suggested for a wide variety of possible uses, including the production of refrigerator parts.

The new material was developed as an answer to product designers and stylists who have been asking for a plastic that carries the uniform color and tone of metal and still retains the economic advantages of polystyrene, the company explains.

With Lustrex, the Company points out, manufacturers will be able to get more pieces per pound than would be available from a similar amount of copper or aluminum. Brittleness and the high cost of manufacturing, two obstacles in prior attempts to approximate the new colors, have been eliminated in the new material, it is claimed.

Store Modernization Pays Off

STORE modernization can pay off more ways than one, according to an announcement by the management of the International Store Modernization Show of the second national competition for the "Best Modernized Store of the Year." A total of \$500 in prizes will be awarded the winners, which will be selected by a jury committee of the American Institute of Architects.

All entries will be judged and exhibited at the Show, which will be held at Grand Central Palace, New York City, during Store Modernization Week, June 19-24. Other exhibits will include the latest developments in store fronts, lighting fixtures, floor coverings, display cases, air conditioning systems, ice makers, cash registers, and coin vending machines. Store owners in the United States spend more than a billion dollars annually for such equipment.

Football Leak, Too

LATEST application of General Electric's Type H leak detector was disclosed when a sporting goods manufacturer revealed that it was using the instrument to spot leaks in footballs just off its production line. From a handy pressure vessel, a small quantity of Freon is introduced into each football during the inflating process. A sample of the atmosphere surrounding the ball then is drawn into the leak detector, which immediately shows whether any of the Freon-laden air has escaped.

In the past, the company tested footballs by inflating them with compressed air and allowing them to stand for 10 days. This procedure, however, increased production time and expense by requiring a permanent "in process" stock of approximately 200,000 balls, and it still did not reveal very slow leaks. With the new G-E detector, the balls are checked as they come off the production line, even infinitesimal flaws being spotted at once.

**SAVE 30%
ON FOOD COSTS**

**IT'S EASY—YOU'LL SAVE TIME
AND MONEY...Read the Details!**

**...Your purchase of
our Home Freezer en-
titles you to member-
ship in the Freezer
Economy Club**

Each day's special that food costs are today's biggest
burden in trying to balance the family budget. This is
easily understood when you realize that the average family
spends about 40% of its weekly net income for food. We
believe however that our "Freezer Economy Club" is the
answer to the high cost of eating. This plan makes it
possible for you to save as much as 30% on food costs and
keep the family better fed, fresher, more alert, and more
economical. When you see how simple it is to accomplish
these results, you'll agree that you can't afford to be
without a home freezer now!

By special arrangement, club members can buy
choice meats, fish, poultry, garden-fresh vege-
tables, fruits and ice cream, by phone.



**With your member-
ship the highest
quality foods are
delivered right to
your door**

All orders are delivered at no extra charge to
your home, ready for storage or immediate use.
Prices are listed in monthly club bulletins for your
convenience in ordering, and will bring you 30%
or more savings in food bills.

CONSIDER TOO, THESE ADVANTAGES

SHOPPING CONVENIENCE. Shop only
occasionally. No need
to go to the stores to load supplies. You
have more time for leisure or other
home duties.

EASIER COOKING. Cook and
eat should be faster than. All
such prepared foods will keep
perfectly for serving at any
future time.

BEST FOOD EMERGENCIES. No embarrassment or
hurry to the store if unexpected guests arrive. If
someone in the family falls or fishes, your freezer
keeps the goods in hand for unexpected all day
any day.

*Compare these food prices
...note the savings!*

**No longer must you be wealthy
to own a Home Freezer... These
savings speak for themselves!**

	Normal Cost	Freezer Cost	Savings
Little Chops			
Chops	\$24.95	\$16.95	31%
Porkchops			
loins	\$44.95	\$31.95	29%
Pork Loin			
Chops	\$44.95	\$31.95	29%
Ice Cream	1.00 quart	55¢ qt.	45%
Blueberries	4 1/2 (12 oz.)	2 1/2 (12 oz.)	45%
Pears	20 (12 oz.)	13 (12 oz.)	35%
Apples	20 (12 oz.)	13 (12 oz.)	35%
Green Beans	20 (12 oz.)	13 (12 oz.)	35%

Savings Savings—30%
Based on prices in Youngstown at January 1, 1949
Food prices subject to seasonal variation.



This pocket-size promotion piece broadcasts
the advantages of the Freezer Economy Club
and cites typical savings which membership
in this fast growing family of home freezer
buyers makes possible.

FOOD FOR Sales

Providing its home freezer customers with a convenient and
economical frozen food delivery service has provided this
commercial refrigerator distributor with more home freezer
customers for whom to provide this frozen food service

THE best home freezer in the world
isn't worth a tinker's (you should
pardon the expression) dam if the
householder who owns it can't keep
it stocked with frozen foods econom-
ically and conveniently.

Capitalizing on this established
fact, Ramsey-Bennett Co., Cleveland,
Ohio, distributor of Victor quick
freezers, Amana home freezers, and
General Electric commercial refriger-
ation equipment, has given new evi-
dence of its promotional know-how
by organizing a "Freezer Economy
Club."

This club constitutes a new and
practical sales approach designed to
convince prospects of the benefits of
owning a home freezer. By special
arrangement, club members—who au-
tomatically become enrolled in the
organization when they purchase a
home freezer from Ramsey-Bennett—
can buy choice meats, fish, poultry,
vegetables, fruits, and ice cream by
telephone from a reputable frozen

food supplier who delivers the orders
directly into the freezers in the club
members' homes.

Potential members are solicited by
stimulating interest in the club via
newspaper advertising and daily spot
announcements over a Cleveland
radio station. The radio promotion
now is being expanded to include
local stations in Youngstown, Canton,
Wooster, Warren, Sandusky, Ash-
tabula, and Akron, so as to assure
adequate coverage of the 25 north-
eastern Ohio counties served by the
Ramsey-Bennett company.

Each inquiry is acknowledged by
a letter and a folder outlining the
advantages of membership in the
Freezer Economy Club. Front page
of this folder features a replica of
the club's membership certificate and
this challenging statement by a pertly
drawn housewife: "Here's how I cut
family food costs 30%. . . . You can
do the same!"

On its inner pages the folder high-



Paul P. Stubbs, assistant sales
manager of Ramsey-Bennett is
the "father" of the company's
home freezer club.

lights the club's two-point program
"(1) Your purchase of our home
freezer entitles you to membership
in the Freezer Economy Club; (2)
With your membership the highest
quality foods are delivered right to
your door."

The folder further explains that:
"All orders are delivered at no extra
charge to your home, ready for stor-
age or immediate use. Prices are
listed in monthly club bulletins for
your convenience in ordering, and
will bring you 30% or more savings
in food bills."

Another page of this folder is de-

voted to a food cost comparison chart which emphasizes in actual dollars and cents the high percentage of savings made possible through membership in the club. Average savings in food costs, as represented by this chart, are 38%.

The folder prominently bears the Ramsey-Bennett imprint, but refers to home freezers in only a general sense, mentioning no specific brand names.

Women Make the Calls

Through experience it has been found that women are more freely admitted to the average home, so consequently the company employs women representatives to follow up all leads and to arrange for home interviews. These women also are used to supervise actual freezer demonstrations in the company's showrooms.

Benefits of the Ramsey-Bennett plan are summed up to prospects by emphasizing that membership in the Freezer Economy Club makes possible the saving of money immediately and continuously through the tremendous economies effected through the special source for food purchasing, through peak season buying, and by eliminating food waste as well as gasoline and parking costs necessitated by normal food shopping.

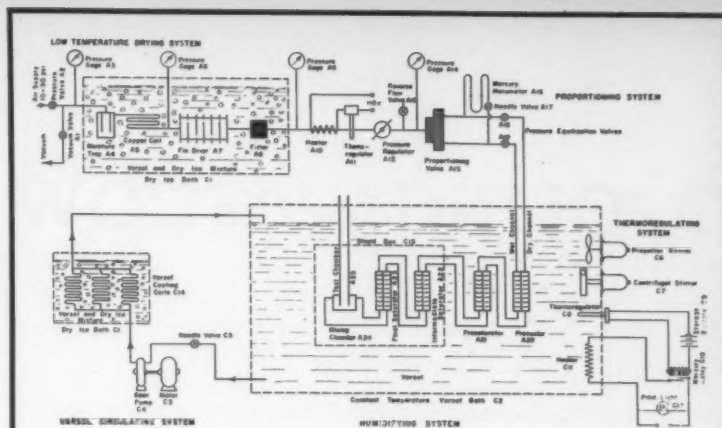
Savings Are Stressed

The savings in food preparation time, the health benefits from better eating, and the advantage of having continuously on hand an immediately available "emergency" supply of food also are pointed out.

When a freezer is sold, a membership certificate is mailed to the purchaser along with full details as to how to order food.

As a member of the Freezer Economy Club, the customer also receives monthly club bulletins which are an important part of the club program. Ramsey-Bennett feels that if it can create and maintain interest in home freezers by informing owners as to the proper foods to buy at the proper time, and telling them when and what foods should be processed at periods when they are in peak supply, such members will be so pleased with their purchases that they will supply good leads for other sales.

This unique plan, which is based more on the conviction that "food
Continued on page 59



Humidity Test Apparatus

A humidity test apparatus developed and built in the Mechanical Instruments Laboratory of the National Bureau of Standards now makes available an instrument for research, calibration, and testing of hygrometers at temperatures below freezing.

The function of this apparatus is to produce air of known relative humidity at temperatures from zero to -40°C . In the new divided flow, low temperature humidity test equipment developed by Arnold Wexler, a current of dry air is divided into two streams, one of which is maintained dry while the other is saturated with respect to ice. Finally the two are recombined.

A proportioning valve is used to divide the flow of moisture-free air in a known ratio. One part is passed through a saturator, over a series of trays containing ice, until it is completely saturated. It is then mixed in a mixing chamber with the other part that has been maintained dry. The combination then is allowed to exhaust through a test chamber into the atmosphere.

The saturator, mixing chamber, and test chamber are kept immersed in a constant temperature bath. The hygrometer, or other device which is being subjected to air of known and constant humidity, is inserted into the test chamber.

The relative humidity in the test chamber is a function of the fraction of air that passes through the saturator, the total pressure in the saturator, the total pressure in the test chamber, the saturation pressure, and the partial pressure of the water vapor in the test chamber. Under ideal conditions, which the apparatus closely approaches, all variables except one are eliminated, and the relative humidity becomes equal to the fraction of air that passes through the saturator.

The essential functional units of the apparatus are the drying system, the

proportioning system, the humidifying system, the mixing chamber, the test chamber, the cooling system, and the thermo-regulating system for temperature control.

The drying system serves to remove all water from the air entering the apparatus by freezing in a dry ice-arsol bath. The dry air then passes through the proportioning system, the major feature of which is the proportioning valve. This valve, which divides the air in a definite ratio, consists of six orifices of equal cross-sectional area so arranged that by a turn of the knob of the valve the incoming air can be divided to produce any of seven ratios, 0, 1/6, 1/3, 1/2, 2/3, 5/6, and 1. The ratio is the fraction of air entering the valve that emerges through one exit channel.

The two air streams, upon leaving the proportioning system, flow through the humidifying system in parallel channels, thermally in contact with one another to allow heat interchange and temperature equilibrium between the two streams. Saturation of one stream is accomplished by allowing it to pass over a series of staggered ice-filled trays while the other stream passes over an identical path of dry shelves.

The dry and saturated air are centrifugally mixed in a mixing chamber and discharged into the atmosphere through a 1 1/8-inch i.d. tube that serves as a test chamber. The saturators, mixing chamber and test chamber are immersed in a bath whose temperature is closely regulated.

Although this instrument was designed primarily to fill a basic need in meteorology, the refrigeration and air conditioning industries may also find it useful. In all these fields, humidity plays an important role. With the humidity test apparatus, it is now possible to calibrate readily and accurately the various humidity measuring instruments employed at low temperatures.

COOLING for the COW COUNTRY

Ranch owners and other residents of the western range country require certain specialized types of refrigeration equipment. Read how Tom Pleasants has built up a lucrative refrigeration contracting business just by catering to his neighbors' needs

TOM PLEASANTS, owner and operator of the T. E. Pleasants Co., refrigeration contracting firm in Sheridan, Wyoming, has spent all his life in the wide open range country—and sportsman's paradise—of northern Wyoming and southern and central Montana, and he has deliberately tailored his business to specifically meet the needs of the type of commercial refrigeration customers which this country produces.

Sheridan prides itself on being "the dude ranch capital of the world," so this area is a natural for the deluxe low temperature walk-in coolers which have become one of the Pleas-

ants firm's specialties. Tom has personally been responsible for putting in "blue ribbon" installations of this type for such famous ranches as the John E. Rice Polled Hereford Ranch and the well known R. J. Miller Ranch, where some of the nation's best purebred Herefords now roam on the prairies once dominated by Sitting Bull and his tribesmen.

Quite naturally, the Pleasants company has handled its share of locker plants, too. Just to mention a few, there are the Modern Locker Plant at Banner, Wyo.; Black & Johnson Lockers, Rochester, Wyo.; and the Little Horn Trading Co. at Wyola,

Mont., where most of the patrons are "vanishing Americans" of the Crow tribe.

Other plants that have benefitted by the Pleasants touch through re-vamping and modernization include the Lucas Bros. Locker Plant at Sheridan and, more recently, another locker plant at Clearmont, Wyo.

Illustrative of the Pleasants' know-how in locker plant construction is the Modern plant at Banner which now boasts more than 280 lockers. Built virtually in the shadow of the Big Horn mountains, this roadside merchandising mecca combines with the locker plant a general store, U. S.

The Modern Locker Plant at Banner, Wyo., silhouetted against the distant backdrop of the Big Horn Mountain range, is typical of the jobs installed by T. E. Pleasants Co.





Tom Pleasants (with hat) joins the operators of the Banner locker plant in an inspection of the refrigeration units which he installed in the plant's chill room.

Post Office, garage, filling station, and trailer camp.

Constructed during the early months of 1947, when steel lockers still were high on the list of scarce items, necessity became the mother of invention and Tom Pleasants utilized his ingenious ability to design a highly successful "jumbo" locker cabinet constructed of wood and wire netting and having a capacity of three and a half times that of the conventional steel units. These oversized storage units proved to be particularly well suited to the requirements of the large ranch trade which patronizes the Banner plant.

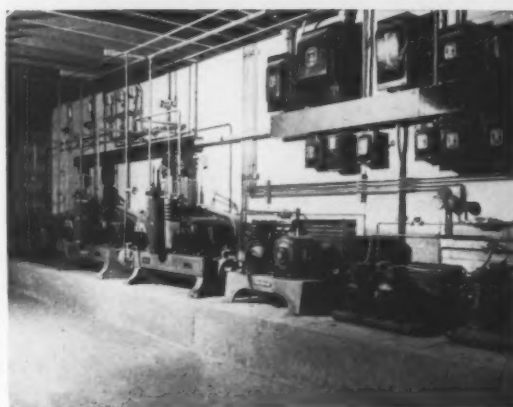
Mechanical equipment for this plant consists of two Model F-300 A8L 3-hp air cooled Mills condensing units connected to one LT-85 Bush water defrost and one LT-120 Bush water defrost coils serving the sharp freeze and storage rooms. A Model F-150 A3L 1½-hp air cooled Mills condensing unit powers two Model 540 UC Betz "Filterpure" unit coolers in the chill room. Pleasants insulated the low temperature section of the plant with 10 inches of K-25 Balsam Wool.

Efficiency of his Pleasants installation was proven quite by accident last spring when a severe sleet storm broke power lines leading into Banner and rendered the plant without power for 89 hours. Despite this long period of time during which the refrigeration system could not be operated, the plant's locker room temperature increased only 12 degrees—from zero to 12 F.

This view of the locker room at the Banner plant clearly shows its special "ranch size" lockers in the lower tier at the right. Note the antelope lying on the floor.



This equipment in the compressor room of Boyd's super market in Sheridan, Wyo., is installed with the neatness which characterizes all of Tom Pleasants' work.



Operations of the Pleasants company are very diversified. When this firm contracts for an installation it handles the whole job from beginning to end. It builds its own coolers from framework, insulation, and vapor seal on through to trackage, rails and other fittings.

In addition to its locker plant and walk-in cooler work, the company also specializes in tailor-made refrigeration systems for bars, cafes, night clubs, super markets, packing houses, and produce firms. In fact, "If it can be refrigerated, we can do it" could very aptly be the Pleasants slogan.

The firm now has five employees

in addition to Tom himself. This personnel includes Tom's son-in-law, George C. Robinson; R. W. Anderson; George C. Williams; Sam Blaney; and last—but far from least—the charming Mrs. Pleasants who keeps a vigilant eye on the company's books. In addition to handling the clerical work for her husband's company, Mrs. Pleasants somehow manages to keep abreast of all her household duties and also handle a part-time job in a Sheridan law office.

Tom Pleasants didn't start out to be a refrigeration man. In fact, he came mighty close to spending his life as a civil engineer. All of his educa-

Continued on page 78



Refrigerators delivered to the "marshalling yard" by truck were arranged in long rows and each was assigned a job number. The fork lift then toted each unit to the warehouse, where it was disassembled and started through the repair process.

OPERATION OVERHAUL

A MILLION dollars worth of major overhaul work on commercial refrigerators may seem like a monumental task, especially when it has to be completed within a space of six months, but that's what the Marshall Webb Co. of San Antonio, Tex., tackled when it took on an Army contract to recondition 2,600 refrigeration units for use in Army posts throughout the country.

Completely reconditioning this many commercial refrigeration units was a tremendous job, to be sure, yet so efficiently did this company set up its operations that once the job got rolling one complete unit every 15 minutes was delivered by the final inspection crews to the firm's crating and shipping department.

Included in this huge stockpile of mess kitchen equipment to be rehabilitated were 2,086 65-cu. ft. reach-in cabinets. The list also included some 424 45-cu. ft. boxes and 83 20-cu. ft. cases. These commercial refrigerators bore the tradenames of more than a dozen different manufacture of this type of equipment.

When the Marshall Webb organization was awarded this huge contract,

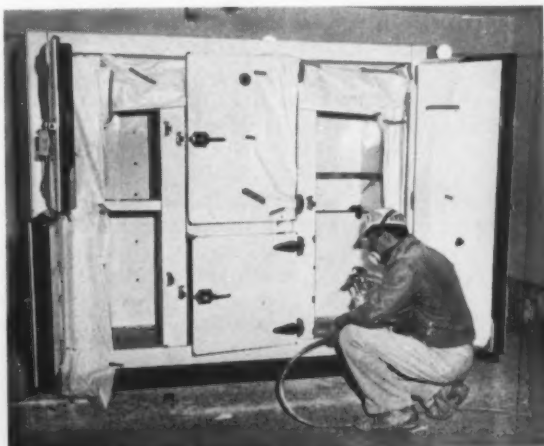
What goes into the reconditioning of 2600 commercial refrigerators? Supplying 1200 feet of gasket material per day was just one of the problems faced by this Texas firm when it tackled this "king size" Army repair job

the company's service staff rocketed from six persons to nearly 200 employees virtually overnight. About 50,000 sq. ft. of space had to be rented, most of it in three government

warehouses at the former U. S. government arsenal.

The actual repair work, of course, constituted by far the largest item of cost in this million-dollar project—

One of the final steps in the reconditioning process was the cabinet finishing, during which each box was carefully and completely sprayed with enamel. From this paint spray booth the refrigerators moved to the final testing department.



about \$750,000. But a few other factors also bulked fairly large. Crating, for instance, called for \$100,000. Payrolls totaled \$50,000. The supply department stocked \$10,000 worth of parts.

Another considerable item of expense was the large amount of gasket material which was required, inasmuch as virtually every unit needed regasketing. To ensure an ample supply of this material, Marshall Webb contracted for the full amount available from a single source and arranged to have 1,200 feet of new gasket material flown in daily by plane.

Motors Handled Separately

Before the job was completed, all this refrigeration equipment went full circle. First, the boxes were brought in from Fort Sam Houston depot. After the mechanical and cabinet repair has been finished, the boxes were returned to the depot.

A fork lift was used to take the boxes into storage, where each box was given a job number. This was to assure that usable parts would be returned to the same box from which they came.

The motor was then taken out and sent to the mechanical department. Metal shelves were taken from the boxes and retinned. If there were any shortages of wooden refrigerator shelves, an order was sent to the supply department. This operation alone made use of some 5,000 feet of wooden moulding per week to build shelves.

Rotting Wood a Problem

When the motor was disengaged from the box, it was sent to motor repair. After it was broken down to its component parts, the condenser was scrubbed vigorously with a strong solution of soap solvent. Kitchen grease, grime and rust accumulation was eradicated in this manner.

Rotting wood was perhaps the greatest defect of the cabinets. A large job of carpentry was done here because 90% of the boxes needed plywood replacement, due to age, deterioration, and moisture absorbed in the woodwork. Also, large amounts of old insulation material had to be removed and replaced.

Sheet metal workers took care of

Continued on page 60



It Pays For Itself

IF YOU would build a substantial backlog of contented customers—and an unfailing source of repeat business—you should tailor your installations so perfectly to those customers' needs that the equipment will pay for itself through such factors as elimination of spoilage, faster service, and more efficient working conditions.

It is on this basis of custom engineering, with each job preceded by a thorough study of the prospect's needs, that A. H. Siebert, vice president of St. Louis Butcher Supply Co., is building the business of his 60-year-old commercial refrigeration department.

Typical of this company's carefully planned "made to measure" installations is the novel combination work table and low temperature storage cabinet designed for a local cafeteria (see photo above).

When St. Louis Butcher Supply Co. engineers surveyed this operation to determine its requirements they found a cafeteria doing a \$2,000-a-week business in food sales in a relatively tiny building, but seriously hampered by inadequate storage space for fresh vegetables and meat which not infrequently resulted in the restaurant completely running out of these staple items. To make matters worse, there was no provision at all for the storage of frozen foods.

As a result of their careful analysis of this operation, Siebert's engineers prescribed, constructed, and installed the unique unit pictured here, which combines 25 cu. ft. of frozen food storage space with an ample amount of hardwood working surface for slicers, grinders, bakery production, and general food preparation.

This cork-insulated "island" unit is constructed of oak and fitted with a sectional maple top. Because there was no space available to locate the compressor outside the cabinet, a 3 x 3 foot "well" was provided in the center of the working area in which a ½-hp Mills condensing unit was installed. The top of this well was left open to provide adequate air circulation for the compressor. It was boxed in by a ridge to prevent food particles from falling into it during preparation work.

Access to the interior of the cabinet is provided by five doors on one side of the island plus three doors and three drawers on another side. A novel L-shaped Stangard cold plate refrigerates this cabinet.

This \$1,000 installation has been so successful in paying for itself through the added food sales which it makes possible that the cafeteria's management has since ordered a 70-cu. ft. standard reach-in refrigerator for dairy products, vegetables, and salads.

MOISTURE PROBLEMS AND THE SERVICEMAN

Part 3 — Moisture Elimination in the Shop

EVERY refrigeration serviceman has his full share of moisture problems. Few, however, have so crystalized their procedures for handling these problems that they can set them down on paper step by step. In this three-part article, the third section of which is presented here, one practicing refrigeration technician details his methods of operation with respect to moisture problems. The opinions presented are his own opinions; the procedures outlined are those which he has adopted or developed on the basis of his own personal experience. We present them with the hope that they may point the way to other less experienced men faced with these same problems—and with the thought that they may service to stimulate some further discussion among our readers on this vitally important subject.

—The Editors

By Joe W. Langford

Service Technician
Waco, Texas

IN-THE-SHOP methods for the elimination of moisture from refrigerator cabinets or coils involve much the same procedure as is utilized in the field (see Part 2 of this series in the April issue of *COMMERCIAL REFRIGERATION AND AIR CONDITIONING*).

When handling systems which have a small capillary or accumulator in the suction line, however, it is essential to use a good vacuum pump for two to three hours after the final blowing-out with CO_2 . With ordinary and full size coils this step need not be carried out, even though a high vacuum on the coil while heating up should prove effective.

In addition to overhauling the unit,

it should be carefully cleaned and all copper surfaces polished with a 400A Wet-o-Dry type sandpaper. After assembling, the unit is baked out in the oven for two to three hours at 180-220 F under a vacuum of 28 inches or better.

As to hermetically sealed units in the shop, a genuine factory exchange is the most profitable and positive method of getting trouble-free performance. Only in the most urgent emergencies should any attempt be made to dehydrate the sealed unit.

This is in view of the fact that refrigeration oils have an exceedingly high affinity to moisture. Inasmuch as the complete oil charge cannot be

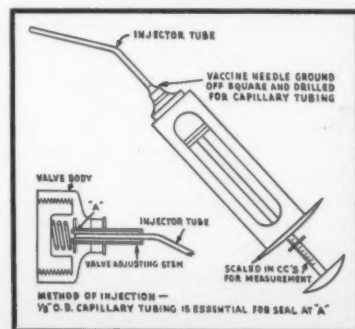
taken out of the majority of sealed units, the oven process would have to be carried out from 18 to 23 hours, with introduction of DEHYDRATED AIR at specific intervals.

The Copelametic, Norge and Cold-spot units, however, are exceptions, in that the crankcases and valves are accessible by field service operations. This makes possible thorough cleaning and the blowing out with carbon-tet and warm CO_2 .

It might be well to point out the characteristics of carbon-tet in relation to metals and sludge. Although having a high solvent factor, this fluid brings about heavy rusting or oxidation of cast iron as well as steel when the metal is not completely submerged or if not dried immediately—i.e., a moist state or slow dehydration cultivates the reaction.

From this report it can be seen that carbon-tet definitely should not be left in any part of a refrigeration system, nor introduced as a means of dissolving sludge. The same applies to Xylene, which has no oxidation action on metals but in time breaks

FIG. 1—An automatic expansion valve dampering fluid injector made from a small size livestock hypodermic syringe.



down neoprene seal rings and terminal blocks.

Zylene is an excellent solvent for freezing sludged rotary blades and compressor valves warranting temporary emergency service. The condenser and receiver are treated with a solution of 75% Xylene and 25% carbon-tet. After a small amount of this solvent solution has been allowed to stand for several hours, preferably overnight, the two assemblies are blown out with CO₂ in inverted positions.

Repeat the process with only carbon-tet, if necessary, to remove oil gum and sludge formations.

Highside floats are processed by the same method used for receivers and condensers. Some precaution, however, must be taken to avoid excessive pressure over 175 pounds which might collapse the float itself.

Expansion valves are soaked in the Xylene bath for 24 hours, after which the screens are removed for thorough cleansing. Resoldering of all sweat joints and plug screws is done cautiously to avoid breaking the seal at the bellows. This phase of the process is not recommended for thermostatic valves and is not essential on comparatively new valves, as the solder is only oxidized after years of use.

The screens are replaced, applying a thin coat of Gasoila type joint-seal to the threads and seat of all screw-in connections.

At this stage, the outlet side is filled with fresh CLEAN carbon-tet (tin containers should not be used for storage or use of this solvent under any conditions). Automatic valves are set in mid-position, or at the point where the orifice is barely open at atmospheric pressure. The solvent is then carefully blown out with the hot CO₂ line connected to the inlet fitting.

The dry gas pressure is slowly increased and suddenly dropped in order to cause the valve needle to chatter lightly. This action frees the yoke and moving parts, dislodging accumulated wax and sludge formations. The valve body is again filled with carbon-tet and blown out.

A test is now made for needle and seat sealing. On automatic and thermostatic expansion valves with the sensitivity bulb in a cold-well, the index finger is held over the outlet. If the dry gas cannot be held with only a moderate pressure from the finger, it can be certain that the needle and seat render the valve defec-

FIG. 2
TEST GAUGE
SERVICE VALVE



Test gauge service valve. Valve body is tapped out for 1/8-inch pipe thread and a 1/4 MPT x 1/4 flare elbow is sealed in with soft solder. The speed couple is equipped with a flare elbow to facilitate attaching the charging hose. The latter can be swiveled around in almost any direction, regardless of the space limitations in which a serviceman may be working. Other advantages of this unit follow: testing—complete purging of all gauge connections when tapping into a system, particularly when the low side is on a deep vacuum; charging—with the drum valve wide open, the modulating action of this service valve enables the serviceman to keep the back pressure within the best range, resulting in quicker charging; pressure control calibration—with the charging hose connected to either the gas drum or high side of the unit, while the suction service valve of the compressor is slightly cracked open on the coil side, almost any cut-in or cut-out pressure can be readily obtained.

tive—that is, unless these parts are replaceable.

The passable valves, cleaned and sealed, are taken from here to the baking-out phase. Automatic and gas charged valves only are baked out for 2 1/2 hours at 180 F under 28 inches vacuum or better. The sensitivity bulb and as much of the capillary as possible is suspended outside the oven below the valve.

Liquid charged valves are not dehydrated in the oven but with the hot CO₂ only. Pressure must be held below 50-75 psi, and the temperature should not exceed 160 F. This makes it possible to keep the bulb at room temperature or lower.

The hot CO₂ is blown through the valve until the body is warm. Although about three minutes is required to do this, less time gives comparatively effective results. The valve is capped immediately to prevent atmospheric moisture entering while the valve body is cooling.

Automatic valve bellows are charged with 4 to 8 cc. of dampening fluid (1 to 2 teaspoons glycerine, pure), employing the injecting de-

vise illustrated in Fig. 1.

Going back to our unit, dehydrated and still on vacuum, the complete assembly is brought to a pressure of 1 or 2 pounds plus, with the proper refrigerant gas vapor or DRY CO₂. This prevents moisture laden air being drawn in while the oil change is being made.

Caution: an extra amount of oil above the normal operating level MUST be added for circulation in the system. This is particularly true with Freon, and lowside SO₂ systems.

Immediately following the oil charge, all compressor cap-screws and bolts are retightened, especially the head bolts, whether the gasket material is Duprex or lead. This step insures positive lasting seal provided the proper tension is pulled evenly all the way around.

The condensing unit is carefully tested for leaks after being coupled onto the coil. This is best done by means of the service connection arrangement illustrated and described in Fig. 2.

With the gas drum connected at
Continued on page 56

CONTRACTORS

News • Activities • Plans

NARC and United Association Sign Joint Labor Agreement

DIRECTORS of the National Association of Refrigeration Contractors, at their regular quarterly meeting in Chicago on March 29 and 30, approved a joint resolution between the labor relations committee of NARC and officials of the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada, A.F.L. The resolution was signed by representatives of both groups at a special conference in Miami, Fla., on March 18 and 19.

The joint resolution acknowledges on the part of the contractors that the United Association has sole jurisdiction in the refrigeration and air conditioning industry; and the United Association acknowledges that the NARC is the national association representing the refrigeration and air conditioning industry, and that its local chapters are the bona fide bargaining agents for agreements affecting wages or working conditions in this field in their respective areas.

Further, the two associations have agreed to undertake an apprentice training program for the industry.

The conference at Miami, at which the resolution was agreed upon, was the fourth such meeting between the two groups, held in each case for the purpose of arriving at a better understanding between them.

Harvey O. Miller, Chicago, chairman of the NARC labor relations committee, said that he felt the joint resolution would be helpful in clarifying the relationships between the two organizations.

"We have now," Miller said, "an opportunity to take the necessary steps to provide ourselves with adequately trained manpower. The preparation of a well-planned apprentice training program will not be an easy task, but it would be hard to imagine a more important one."

Representing contractors at the Miami meeting were: H. E. Wheeler, Chicago; Warren W. Farr, Cleveland; R. W. Noll, Los Angeles, and Miller. The United Association was repre-

sented by Martin P. Durkin, Washington, D. C., general president; Leo H. Green, Pittsburgh; John J. McCartin, Chicago, and Robert, F. Lynch, Jersey City, N. J.

Text of the joint resolution follows:

RESOLUTION

WHEREAS, The National Association of Refrigeration Contractors is the established organization of contractors engaged in the handling, installing, repairing and maintenance of refrigeration and air conditioning systems of all kinds; and

WHEREAS, The United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada, A.F.L.—hereinafter referred to as the United Association—is the organization of craftsmen whose members handle, install, repair and maintain refrigeration and air conditioning systems; and

NEW NAME FOR N.A.R.C., TOO

DIRECTORS of the National Association of Refrigeration Contractors have decided to recommend to the membership that the name of the organization be changed to *The Refrigeration and Air Conditioning Contractors Association*.

It is felt that the present name does not adequately cover the industry as served by members of the association, some of whom sell, construct, install and service both refrigeration and air conditioning equipment, while others specialize in either refrigeration or air conditioning.

WHEREAS, The American Federation of Labor—guided by its official records of the work jurisdiction of the United Association—has established the United Association as the only trade union whose members possess the sole and exclusive right to perform all the work of the refrigeration and air conditioning industry; and

Continued on page 74

CONTRACTOR AND UNION OFFICIALS CONFER



Members of the labor relations committee of the National Association of Refrigeration Contractors and representatives of the United Association are shown here during their meeting in Miami on March 18 and 19. Standing, left to right, are: John J. McCartin, United Association, Chicago; Warren W. Farr, NARC, Cleveland; Leo H. Green, United Association, Pittsburgh. Seated, left to right, are: Robert F. Lynch, United Association, Jersey City, N. J.; Martin P. Durkin, United Association, Washington, D. C.; H. E. Wheeler, NARC, Chicago; Harvey O. Miller, NARC, Chicago; and R. W. Noll, NARC, Los Angeles.

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ABOUT *People*

John M. Bess has resumed his former position as executive vice president of Noma Electric Corp. of Maryland. This is the equipment and appliance branch of Noma operations and includes the Refrigeration Corp. of America, Es-



tate-Heatrola and K-D Lamp divisions.

Bess had resigned his executive connection with Noma about a year ago to devote himself to several independent reorganization projects. He had, however, continued as a director of the parent organization. He will concern himself mainly with streamlining plans and policies of the three divisions under his supervision. Managements of the divisions remain unchanged.

William J. Mays has been elected a vice president of Cordley & Hayes, New York City. **H. Douglas Chisholm** has been elected secretary. Chisholm takes over the former duties of Mays as secretary and purchasing agent, and continues as controller.

Erwin J. Mueller has been appointed manager of the branch office of Puro Filter Corp. of America at 613 Del Monte Way, St. Louis.

Edward V. Sullivan has been appointed advertising and sales promotion manager of the Lau Blower Co., Dayton, Ohio. He formerly was an account executive with the Hutzler advertising agency, Dayton.

Walter V. Davidson, Jr., has been appointed assistant to the president of W. B. Connor Engineering Corp., New York City. He formerly was with the management firm of Stevenson, Jordan & Harrison, Inc.

C. M. "Pete" Hatcher has been named advertising and sales promotional manager of Baker Refrigeration Corp., South Windham, Me., and **Walter T. Martin** has been named industrial engineer.

Hatcher for the past year was as-



Hatcher



Martin

sociated with the Coca-Cola Bottling Works of Nashville, Tenn., as advertising manager, and prior to this was advertising and sale promotion manager of the Universal Cooler Division of International Detrola Corp., Marion, Ohio.

Martin also was formerly with Universal Cooler Division, where he was in the time study department. He will have supervision of all time, motion analysis and methods engineering for the company.

Morris H. Wright has been elected vice president in charge of finance for the Weatherhead Co., Cleveland. He has been treasurer of the company since 1946, and will hold that position in addition to his new responsibilities. Wright joined Weatherhead in 1944 as comptroller, became a director in 1946.

Audrey Hummel, 53, plant 2 superintendent for Koch Refrigerators, died of a heart attack at his home in Parkville, Mo., on March 8. He had been with Koch for more than 25 years, and at one time was purchasing agent for the firm.

Carlos Morgan has been appointed acting advertising manager for Penn Electric Switch Co., Goshen, Ind. He succeeds J. R. Nededu, former manager, who resigned to enter the advertising agency business. Morgan has been with Penn Switch for the past 13 years, was formerly assistant advertising manager, and has long been connected with the company's advertising activities.

Richard A. Angus has been appointed sales manager of Miller Metal Products, Inc., Baltimore, Md. He formerly was general sales manager of Sunroc Refrigeration Co., Glen Riddle, Pa.

R. E. "Rod" Ristow has been named head of the Heat Exchange



Division of Super-Cold Corp., Los Angeles manufacturer of refrigeration products. Ristow is the former president of Drayer-Hansen Corp. He will make his headquarters in the Super-Cold offices at 850 E. 11th Place, Los Angeles.

George R. Lindahl, Jr., Super-Cold vice president, indicated that the addition of Ristow to the staff was part of an expansion program which would place Super-Cold "squarely in the coil and heat exchange industry."

Stanley S. Willis has been appointed Chicago district manager for the brass division of Kerotest Mfg. Co. Willis has been with Kerotest since 1931. In his new capacity he will service Indiana, Illinois, Wisconsin, Minnesota, North and South Da-

Continued on page 81

A new field for you, Mr. Contractor:

CONDITIONING TELEPHONE RELAY STATIONS

Moisture and dust are the twin maintenance "bogies" in the field of telephonic communication. Learn how adequate air conditioning of relay stations helps whip both these problems

THE current demand for air conditioning of telephone relay stations is the direct result of enormous maintenance problems created by moisture and dust. Both of these items interfere with ideal operation and performance of the relays and breakers, and result in general communication confusion.

Since moisture, temperature and dust create separate problems, they should be considered as separate subjects.

Moisture

Moisture in relays and moisture in cables has been a problem that has plagued telephone engineers and maintenance men ever since the invention of the telephone. To date there has been no satisfactory solution to their problems, but, with the recent strides made in moisture control by air conditioning, it has been generally agreed that the problem can be eliminated. Temperature control, in relay stations, has never been considered very important except as it affects the dew-point of the air in the conditioned area.

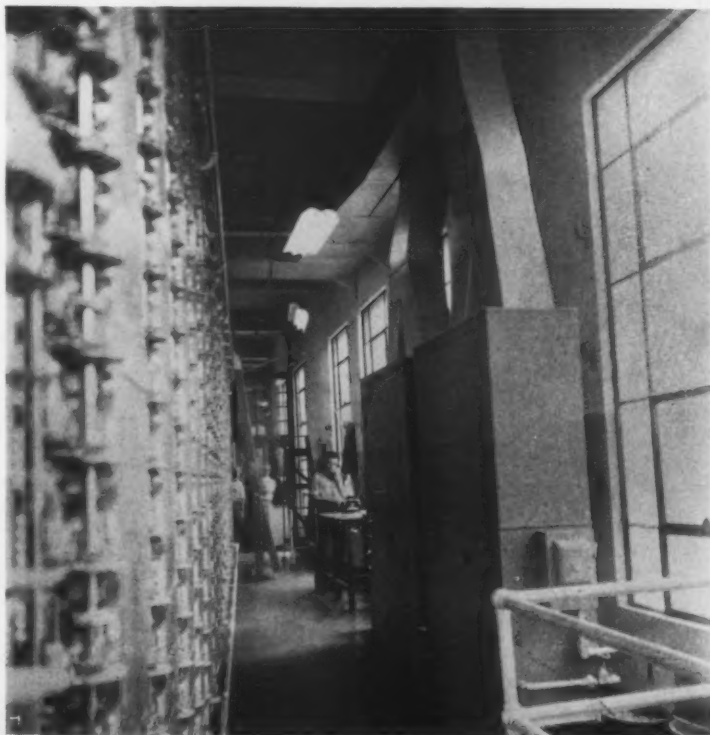
These twin 5-hp Chrysler-Airtemp packaged air conditioners comprise a typical humidity and dust control installation in a telephone relay station. Reports indicate that such installations have reduced maintenance costs as much as 50 per cent.

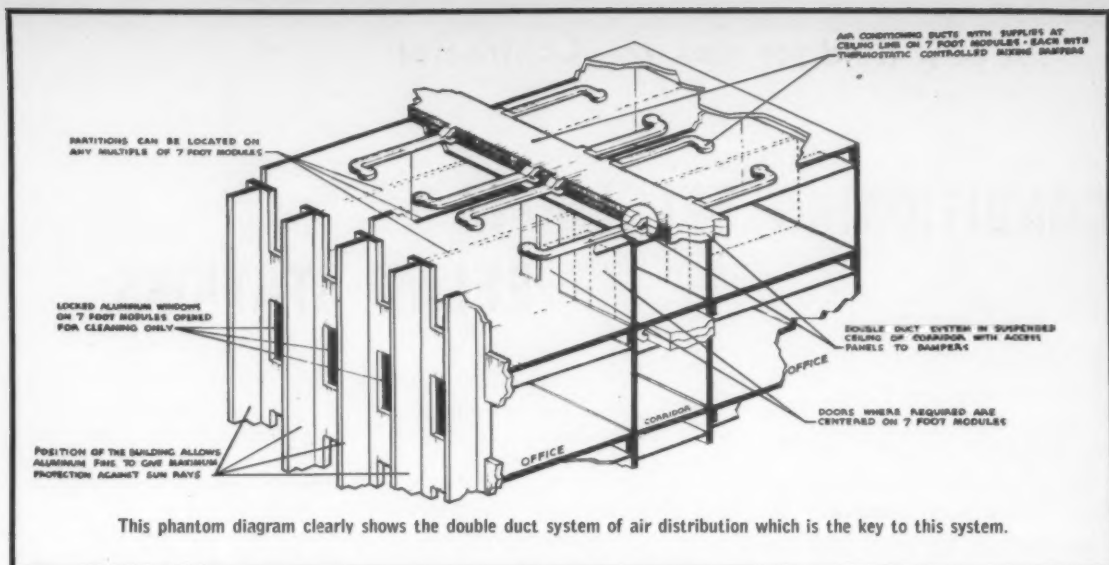
The usual preference of the telephone people seems to be that the relative humidity in outlying "repeater stations" should not be greater than 60%. During cold weather this is easy because the internal load in the building provides dry heat and a slight increase in the dry bulb temperature will lower the relative humidity to an acceptable point.

It is during the summer that unfavorable conditions will exist, particularly during warm wet weather. In many places the temperatures may rise to 100 F or over and, if these temperatures are preceded or followed by wet weather, high humidities will result.

In all cases it can be shown that if the temperature may be disregarded, it is possible to increase the dry bulb temperature enough to keep the relative humidity below 60%. For instance, even under the unusual conditions of 85 F and 100% relative humidity, it would be possible to reduce the relative humidity of that air to 60% by heating it to a temperature of 101.5 F. The fact remains, however, that the telephone people realize that they can not completely disregard the temperature, and in general they do not want the dry bulb temperature to go very far over 90 F.

High relative humidities may be a
Continued on page 57





Designed **FOR FLEXIBILITY**

A specially devised twin-duct system of air conditioning makes it possible to heat and cool this southern California office building simultaneously, should the need arise. Flexibility plus is the keynote of this versatile 3100-hp installation



A HUGE 3100-hp year-around air conditioning system, so flexible in design that a different degree of heat or cold can be provided every 14 feet throughout the entire 500,000-sq. ft. structure, is one of the outstanding features of the new 13-story headquarters building of General Petroleum Corp. in Los Angeles, Calif.

Secret of this flexibility is the twin-duct air distribution system which makes it possible to supply both heated and cooled air simultaneously to the same or adjacent portions of the building, should the need arise. The separate ducts supplying the heated

The cooled (or heated) air distributed throughout the individual offices by ceiling diffusers such as this. The air conditioning plant will produce a ton of cooling per day for each such office.

and cooled air join as they enter each air outlet.

These outlets are spaced to fit the modular design of the building which is on a 14 and 7 foot plan. Outlets are located each 14 feet (as indicated by the outside walls) on most floors of the building. A few floors, where smaller offices may be used, contain outlets every 7 feet.

Each outlet has its own thermostat control—more than a thousand controls altogether. Since most offices are 14 feet in width, that means each office can choose its own weather.

Where offices are larger, one control can be linked to several outlets, the extra control position simply being blanked off. The design of the building includes movable steel interior walls for maximum flexibility and the air conditioning system

Four are located on each floor from the second to the top floor of the 13-story building.

Each fan room contains heating and cooling coils and a 3-hp electrically driven fan flowing 7500 cubic feet of air per minute. The fan draws about 25% outside air to mix with about 75% return air which has been passed through a sound filter and past a bank of sterilizing lamps.

The sterilizing lamps and additional duct filters, which process both outside and re-used air, will, it is hoped, reduce the transmission of colds and other infections, as well as keeping the building interior free of expensive and damaging dust.

The coils for hot and cold air are located in separate chambers and the hot coil chamber is automatically controlled at a level required by the heating load, which enables the system to provide a higher delivered air temperature during warm-up periods and periods of extreme heat demand.

All fan rooms are controlled by a single panel located in the basement. Red lights show instantly which of the 48 rooms are in operation.

A high degree of economy is expected from the zonal system from the stand-point of building operations. Approximately 20 rooms are served by each fan room, and each fan room can operate independently of all the others. Hence, when small portions of the building are in use at night and on week ends and holidays, the effective air conditioning of the used areas can be accomplished without heating or cooling the entire building.

In the design of the fan rooms par-

ticular attention was paid to compactness of design to keep usable office space to a maximum. Consequently, each room contains only about 225 sq. ft., although complete accessibility of all equipment was achieved.

Additional attention in design was given to the ducts themselves to keep the double duct system from taking up too much overhead space. The ducts were designed to measure only 5 inches in depth. Over 250 tons of galvanized steel were used in fabricating the twenty miles of ducts.

Connecting the fan rooms with the central heating and refrigerating plants in the basement are risers which are much smaller than those which would have been required if the separate fan room idea had not been employed.

The refrigeration plant of the building consists of three 300-hp centrifugal compressors using Freon 11 refrigerant and having a capacity of 333 tons each. Four chilled water pumps, each serving one group of fan rooms (which are located one above the other), circulate the coolant through the building.

Condensers are located on the roof of the building and, for beautification purposes, are completely surrounded by a sheet steel superstructure.

Sixteen hundred horsepower in electric motors alone are used in the distribution system. Another 600 hp of capacity is contained in the four oil or natural gas boilers. The 900 hp of capacity in the three centrifugal refrigeration compressors brings the total to 3100 hp of weather-making equipment.

Structural features of the building

matches this flexibility in every respect.

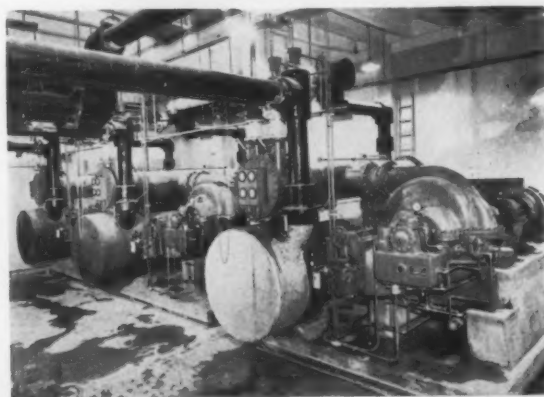
The controls operate dampers which automatically mix the hot and cold air to provide the desired temperature. A minimum of six and an average of eight complete air changes hourly are provided.

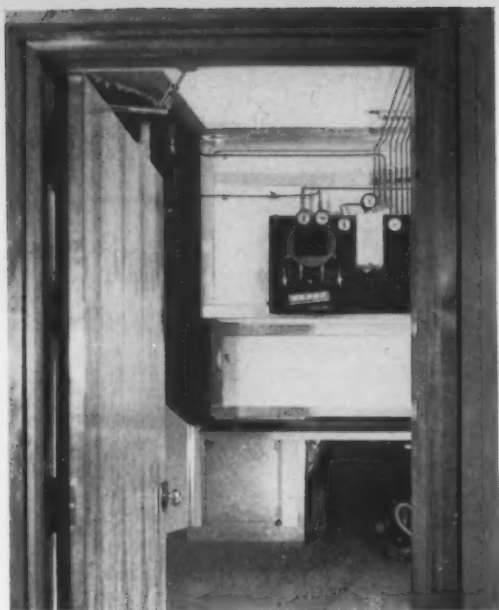
Feeding the air to the twin-duct system are 48 fan rooms which aid in providing the "zoned" control.

This bank of electric pumps and risers distributes the cooling medium to the 48 fan rooms, four of which are on each floor.



These three giant 300-hp centrifugal compressors, each with a capacity of 333 tons, comprise the heart of the cooling system.





Despite the extreme compactness of the individual fan rooms, as evidenced in this photograph, complete accessibility of all equipment was achieved.

THE BEST YEAR OF YOUR LIFE

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See the Advertisement on
Page 45

the building to keep direct sun off the glass areas. Interior aluminum venetian blinds also act as insulation to keep exterior heat absorption down.

Estimated savings from the aluminum "fins" alone are 100 tons of refrigeration capacity with a consequent reduction in operation cost.

Ground floor areas, which are to be leased for store areas, will have separate heating and air conditioning plants fitted to the needs of the tenants. However, a tiny air conditioning unit was installed to provide for the needs of the public telephone booths in the ground floor lobby.

W. S. Kilpatrick & Co., Los Angeles, were contractors on the project. Basic approach in the design of the equipment was handled by the office of Ralph E. Phillips, consulting mechanical and electrical engineer.

Air conditioning systems as complete and flexible in design as this one is require the type of instrumentation and control provided by the panel board pictured below.

This cooling tower on the roof of the 13-story building is neatly wedged between the housing for the elevator control equipment (left) and the building's superstructure.



which provide additional insulation are:

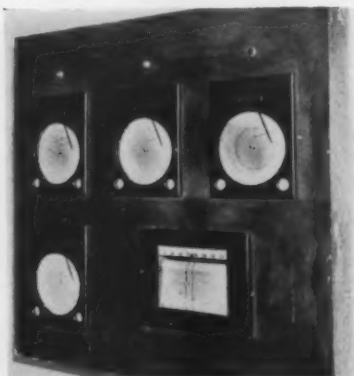
(1) the use of pumice in structural concrete, which gives about double the insulating quality of ordinary concrete, in one exterior wall and the buildings floors;

(2) the use of hollow walls with gunite surfaces for three exterior walls and the use of steel interior walls containing rockwool, both of which have over twice the insulating

qualities of conventional materials for such jobs;

(3) the use of a double ceiling above each floor, one formed by acousti-celotex and containing the lighting fixtures and air conditioning ducts, and other formed by vermiculite plaster, which fireproofs the structural joists supporting the concrete floors; and,

(4) the use of aluminum "fins" which run vertically up three sides of



REFRIGERATION INDUSTRY

News

HILL TRAINS MEN IN COMMERCIAL COOLING

A four-day school of instruction in commercial refrigeration recently was conducted by C. V. Hill & Co., Inc. of Trenton, N. J., at its Trenton plant and at a number of key cities throughout the United States, including Jacksonville, Fla.; Dallas, Tex.; San Francisco, Calif., and Chicago.

Instruction was divided into three groupings or classifications: 1—assembling line-up of all type Hill fixtures; 2—How to service fixtures and replace parts; 3—Refrigeration systems and problems.

Members of dealer organizations in the vicinity were in attendance, as well as maintenance men for the large grocery chain stores, who employ the company's equipment in the handling of perishable foodstuffs.

The school was conducted by a factory crew of five, including Paul B. Harrison, service manager; Vic Smith, chief engineer and Malcolm MacMaster refrigeration engineer.

J. B. HEWETT BUYS WM. W. SHORT CO.

John B. Hewett, who for ten years was sales manager of Anemostat Corp. of America, has acquired the William W. Short Co., Inc., New York City, which was organized and formerly operated by the late Mr. Short.

The company, under the direction of Hewett, will continue to represent the following accounts in the Greater Metropolitan District of New York, Westchester County, Long Island and Northern New Jersey: Anemostat air diffusers, Titus registers and grilles, Drayer-Hanson coils and condensers, Chicago fans and blowers, Raytheon electrostatic precipitators, and Young regulator controls.

92 EXHIBITORS SIGN FOR SPACE AT ALL-INDUSTRY EXPOSITION; SPECIAL CONFERENCE BOOTHS TO BE INNOVATION THIS YEAR

Nearly 50% of the available space at the 6th All-Industry Air Conditioning and Refrigeration Exposition to be held at Atlantic City, N. J., November 14 to 18, has already been sold to members of the Refrigeration Equipment Manufacturers Association, sponsor of the show, according to an announcement by REMA's show committee.

Sale of space now is open to all manufacturers of equipment in the air conditioning and refrigeration industry, whether REMA members or not, according to H. F. Spoehrer of Sporlan Valve Co., chairman of REMA's All-Industry Exposition committee.

Other members of this committee are: K. B. Thorndike, Detroit Lubricator Co.; J. K. Noel, Jr., Victor Products Co.; and J. F. Dalley, Typhoon Air Conditioning Co., Inc.

One of the innovations at this year's 6th All-Industry Exposition will be conveniently located "conference booths." These are furnished booths provided by the show management for the convenience of exhibitors and visitors to the show where they may rest in comfort while discussing business matters.

Some idea of the size of the crowd expected at the 6th All-Industry Air Conditioning and Refrigeration Exposition can be gained from the fact that 5200 hotel rooms have been reserved for the five day event.

Sale of space for the 6th All-Industry Air Conditioning and Refrigeration Exposition is under direction of R. K. Hanson, Show Director, 1107 Clark Building, Pittsburgh 22, Pennsylvania.

Following is a list of the

92 companies which have already reserved space for the All-Industry Exposition:

Ace Cabinet Corp.; Arme Industries, Inc.; Alco Valve Co.; American Colls Co.; American Refrigerator & Machine, Inc.
 Amineco Refrigeration Products Co.; Ansul Chemical Co.; Arcade Manufacturing Div., Rockwell Mfg. Co.; Automatic Products Co.
 Baker Ice Machine Co., Inc.; Betts Corp.; Bonney Forge & Tool Works; Brewer-Titchener Corp.; Brunner Mfg. Co.; Bundy Tubing Co.; Bush Mfg. Co.; Chicago Seal Co.; Coolstream Corp.; Copeland Refrigeration Corp.
 Curtis Refrigerating Machine Div., Curtis Mfg. Co.; Cutler-Hammer, Inc.; Davison Chemical Corp.; Day & Night Manufacturing Co.
 Dayton Rubber Co.; Delavan Mfg. Co.; Detroit Lubricator Co.; Dole Refrigerating Co.; E. I. du Pont de Nemours & Co., Inc.; Ebco Mfg. Co.
 Electromatic Div., Simons Co.; Emil Steinhilber & Sons, Inc.; Easton Chemicals, Inc.; Fedders-Quigan Corp.; Frigidaire Div., General Motors Corp.
 Gates Rubber Co.; General Controls Co.; General Electric Co.; L. H. Gilmer Co., Div. of United States Rubber Co.
 Heat-X-Changer Co., Inc.; Henry Valve Co.; Hubbell Corp.; Imperial Brass Mfg. Co.
 Jarow Products; Jas. P. Marsh Corp.; Kelvinator Div., Nash-Kelvinator Corp.; Kennard Corp.; Kerotest Mfg. Co.; Kinetic Chemicals, Inc.
 Kold-Hold Mfg. Co.; Kramertrenton Co.; Larkin Colls.; Lehigh Manufacturing Co., Div. of Lehigh Foundries, Inc.; Lewin-Mathes Co.; Lynch Corp.
 McIntire Connector Co.; McQuay, Inc.; Mario Coll Co.; Merchant & Evans Co.; Mitchell Manufacturing Co.; Mueller Brass Co.
 Pacific Lumber Co.; Penna Electric Switch Co.; Ranco, Inc.; Refrigeration Corp. of America; Rigidbilt, Inc.; Rotary Seal Co.
 Servel, Inc.; Sporlan Valve Co.; Standard Refrigeration Co.; Sun Oil Co.; Superior Valve & Fittings Co.
 Tecumseh Products Co.; Temprite Products Corp.; Tenney Engineering, Inc.; Texas Co.; Tyler Fixture Corp.
 Typhoon Air Conditioning Co., Inc.; United Mfg. & Service Co.; United Refrigerator Mfg. Co., Inc.; Universal Cooler Div., International Detroit Corp.
 Victor Products Corp.; Victory Metal Mfg. Corp.; Virginia Smelting Co.; Wabash Mfg. Co.; Wagner Electric Corp.; Weatherhead Co.
 Westinghouse Electric Corp.; White-Rodgers Electric Co.; Whiting Corp.; Refrigeration Div., Wilson Cabinet Co., Inc.; Wolverine Tube Div., York Corp.

DEEFPREEZE PLANS HOUSEHOLD LINE

Expansion of its manufacturing business to include refrigerators in addition to home freezers has been announced by Deepfreeze Div. of Motor Products Corp., North Chicago, Ill.

According to G. H. Smith, vice president and general manager, Deepfreeze is entering the highly competitive household refrigerator field with an assurance of 15,000 orders. The company will make five models, including a 10½ cu. ft. refrigerator-freezer combination and deluxe and standard models in both 10½ and 8 cu. ft. straight refrigerator units.

Contract has been let for construction of a separate factory building, adjacent to the present Deepfreeze plant, to house production of the refrigerator line. Building and necessary machinery will involve a cost of \$1,400,000, Smith said.

DRISCOLL IS NAMED FIRST RISAC HEAD

W. H. Driscoll, vice president of Carrier Corp., has been named first chairman of the Refrigeration Industry Safety Advisory Committee (RISAC). He represents the Air Conditioning and Refrigeration Manufacturers Association on the committee.

W. M. Timmerman, elected as the committee's first vice chairman, is a commercial engineer of General Electric Co.'s household refrigeration division, and represents the National Electrical Manufacturers Association in RISAC.

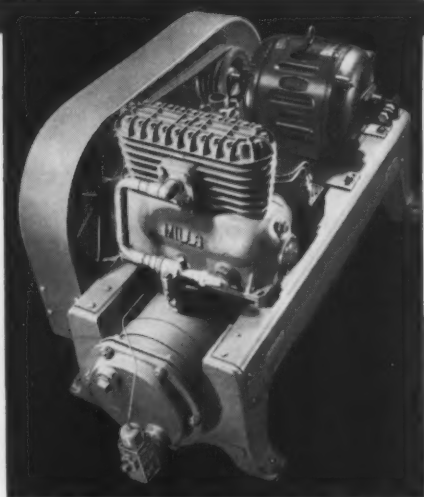
The organization's treasurer is C. M. Cordley, president of Cordley & Hayes, who is co-chairman of the Drinking Water Cooler Manufacturers Association and represents the Refrigeration Equipment Manufacturers on the committee.

Cyrus W. Miller is executive secretary of RISAC.



● The demand for our Compressors and Condensing Units has been maintained so consistently that we have moved the complete division from the branch plant to larger quarters at the main plant.

New Facilities at Headquarters
At the Fullerton Ave. main plant, improved facilities,

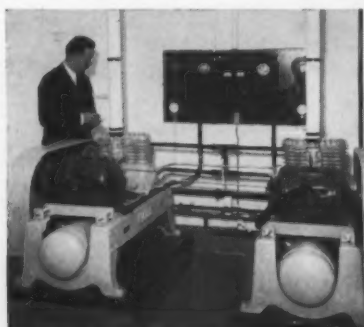


Mills Compressor and Condensing Units include a complete line of air-cooled, water-cooled, and combination air and water-cooled models.

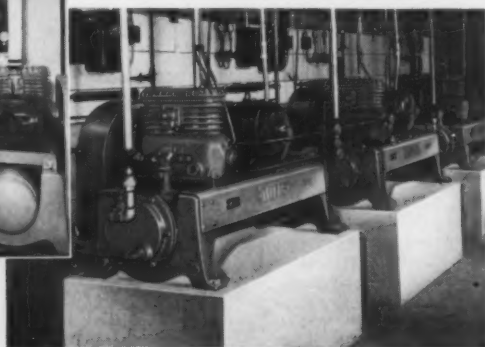
streamlined manufacturing operations and controls have allowed us to step up production and improve deliveries and service.

Your inquiries will receive immediate attention. Our new 64-page Bulletin 204-1 will help you in selecting appropriate units. Write today.

MILLS INDUSTRIES, INCORPORATED
4100 Fullerton Avenue Chicago 39, Illinois



Two typical installations of Mills Compressors. There is an efficient dependable Mills Condensing Unit for every installation.



MILLS

COMPRESSORS
and
CONDENSING
UNITS

PENDERGAST NAMED HEAD OF BAKER

T. S. Pendergast has been elected as a director and president of Baker Refrigeration Corp.'s entire operations by the unanimous vote of the company's board members. Pendergast has held the position of general manager at Baker for the past six months.

In commenting on Pendergast's appointment, Albert Fink Milton, secretary, treasurer and also chairman of the executive committee, added that the board's decision to place an "on the scene" president had become advisable due to the increased activities and sales efforts of the corporation. During the past few months, Baker has announced several new air conditioning and refrigeration products.

Baker Refrigeration Corp. is a member of the Equity Group. At the present time, the Securities and Exchange Commission is being asked to approve a plan whereby Baker would be acquired by Bell Aircraft Corp. of Niagara Falls, New York. This would be accomplished by a stock transfer within the Equity Group.

OBERC DISTRIBUTES USAIRCO UNITS

United States Air Conditioning Corp. has appointed J. M. Oberc, Inc., Detroit, Mich., as exclusive distributor for the usAIRco line of packaged air conditioning units in southeastern Michigan.

A stock of 3, 5 and 7½ ton usAIRco store conditioners and ¼ and 1 ton water cooled console air conditioners will be available at all times to give Oberc customers a complete line of packaged air conditioning equipment.

WHOLESALE MOVES

Automatic Heating & Cooling Supply, Chicago parts wholesaler, has enlarged its South Branch, located at 809-811 W. 74 St.

The new, enlarged quarters are more than double their former size. Likewise, the inventory carried at the Branch Store is more than doubled. Parking facilities at this location are excellent.

K. C. WHOLESALER HAS 10th BIRTHDAY

Refrigeration Equipment Co., wholesaler of refrigeration and air conditioning supplies, celebrated its 10th anniversary with an "open house" at its headquarters, 2400 Grand Ave., Kansas City, Mo., on April 11.

An all-day affair, the open house included entertainment and prizes for customers, several hundred of whom attended. Representatives of various manufacturers whose equipment the wholesaler handles also were present, to help E. L. Trampus and his staff celebrate the event and to meet the firm's customers and help them out with their installation and service problems.

About 100 manufacturers and their representatives attended a "manufacturers appreciation dinner" on the evening of April 10 at Adrian's Mart Cafe.

Beginning in 1939 with a small operation at 2400 Grand Ave., site of its present headquarters office and warehouse, Refrigeration Equipment Co. now operates branch refrigeration supply outlets at 318 N. Main, Wichita, Kan., and 332 Kansas Ave., Topeka, Kan., and washer parts stores at 1819 McGee, Kansas City, and 327 N Main, Wichita.

YORK LICENSED BY RECOLD ON COILS

Under the terms of a license agreement recently signed between York Corp., of York, Pa., and Refrigeration Engineering, Inc., of Los Angeles, York will manufacture certain refrigeration coils using the water defrost method.

The water defrost method, patented by Recold in 1940, employs the use of ordinary tap water for defrosting the refrigeration coil. The coil can be defrosted while maintaining, within the refrigerated space, a temperature below freezing.

The license agreement between York and Recold brings to 11 the number of manufacturers operating under this agreement.

STEINHORST DEALERS MEET IN UTICA



Nearly 100 dealers and distributors of Emil Steinhorst & Sons, Inc., attended the company's territorial sales and service convention at Hotel Hamilton in Utica, N. Y. The three-day session featured demonstrations and talks by representatives from companies manufacturing component parts for Steinhorst commercial refrigeration equipment as well as by Steinhorst executives themselves. Shown above are, in the usual order: H. F. Pfaff, Belvidere, N. J., dealer; Russell Inscho, also a Belvidere, N. J., dealer; Jake Fisher, Elizabethtown, Pa., dealer; Dan Sweeney of Springfield, Mass., sales representative in Vermont, New Hampshire, and Maine; and Stan Talbot of Haddonfield, N. J., distributor throughout New Jersey and Long Island.

THORNDIKE IS NEW HEAD OF REMA

K. B. Thorndike, vice president, Detroit Lubricator Co., was elected president of the Refrigeration Equipment Manufacturers Association at its annual board of directors meeting in Chicago on March 30. He succeeds H. F. Hildreth, manager, refrigeration specialties department, Westinghouse Electric Corp., as head of the association, which is now the largest trade association in the mechanical refrigeration and air conditioning industry with 120 members.

Other new officers elected at this meeting were: R. H. Israel, sales manager, refrigeration department, Virginia Smelting Co., vice president; W. A. Siegfried, president, Superior Valve & Fittings Co., treasurer; and W. J. Stelpflug, vice president, Hussmann, Refrigeration, Inc., secretary.

These new officers, with Hildreth, retiring president, become the association's executive committee for the coming fiscal year.

Newly elected directors of the association are H. Blake Thomas, vice president, McQuay, Inc.; Jack Searls, vice president, White Rogers Electric Co.; A. R. Benua, president, Ebco Mfg. Co.; Israel; Thorndike; John E. Dube, vice president, Alco Valve Co.; and W. F. Switzer, commercial sales manager,

Frigidaire division, General Motors Corp.

Others continuing to serve as members of the board are Hildreth; Paul L. Craft, manager, jobbing division, Mueller Brass Co.; J. F. Dalley, president, Typhoon Air Conditioning Co., Inc.; J. Kingsley Noel, Jr., vice president, Victor Products Corp.; Howard R. Roberts, vice president, Whiting Corp., refrigeration division; R. L. Sears, sales manager, Lynch Corp.; Siegfried, and Stelpflug.

Advisory members of the board of directors include past presidents E. M. Flannery, vice president, Bush Mfg. Co.; E. A. Vallee, vice president, Automatic Products Co.; R. H. Luscombe, sales manager, Penn Electric Switch Co.; F. J. Hood, Ansil Chemical Co., and H. F. Spoehrer, vice president, Sporian Valve Co.

PRICES REDUCED ON LOUDON UNITS

Loudon Sales, Inc., Minneapolis, has announced price reductions on its walk-in coolers, milk coolers, and freezers.

On walk-in coolers, reductions amount to from 10 to 15 cents per square foot; milk cooler prices have been dropped from \$20 to \$100; and freezer prices have been cut \$10.

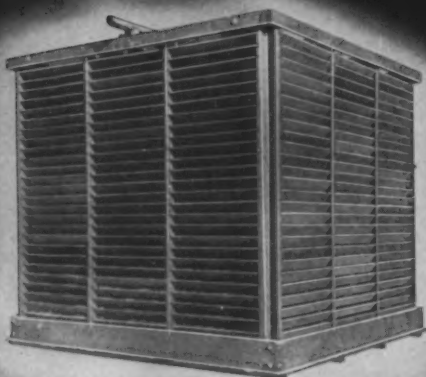
The company is bringing out a new self-contained bar for hotels, private homes and restaurants. Details will be announced shortly.

SPECIFY MARLEY

Series 200

FOR AN

ENGINEERED SPRAY TOWER



If you need a cooling tower that

- May be expanded at any time
- Is pre-fabricated for easy erection
- Can be erected by semi-skilled labor
- Has complete Erection, Operation and Maintenance Instructions
- Is assembled with heavy galvanized bolts
- Is made of Heart Quality Redwood
- Has double vertical columns
- Is designed to withstand 100 mph wind
- Has slip-fit louvers
- Has complete basin with sump and automatic valve
- Is designed with a balanced spray system
- Has patented Marley Spray Nozzles
- Will give long trouble-free service
- Has Atmospheric Sections as optional equipment
- Can be installed in an open location

YOUR BEST BUY is a MARLEY SERIES 200

Series 200 atmospheric spray towers are designed to meet the requirements of dairies, locker plants, air conditioning and thousands of other applications where low first cost is a "must."

By installing standard Atmospheric Sections in a Series 200 Cooling Tower various fluids may be cooled indirectly. Series 200 Coil Towers are especially desirable for Engine Jacket Cooling, Diesel Engine Cooling, Quench Oil Cooling, and for many other similar applications.

Ask for a MARLEY Factory-Trained APPLICATION ENGINEER to tell you how the SERIES 200 will help solve your air conditioning and water cooling problems. No cost or obligation.



THE MARLEY COMPANY, INC.
Kansas City 15, Kansas

NEW PLANTS FOR NEW FACILITIES



Marking the culmination of more than 10 years of business, Anderson & Wagner, Los Angeles manufacturer of Everfrost soda fountains, carbonators, and soda bars are presently making a sizeable addition to their plant. The new addition, when completed in accordance with the architect's drawing shown here, will more than double the size of the company's present facilities and will bring the total floor space of the entire plant to 30,000 square feet.



Construction of this new addition to the Delavan Mfg. Co. plant in Des Moines, Iowa, was made necessary by the rapid expansion of the company's line of compressor replacement parts. The new building, covering 6500 sq. ft., will also make room for an enlarged testing laboratory.

COOLERATOR SPLITS SERVICE, PRODUCTION

Coolerator Co. has transferred its service departments from the factory to new quarters at 526 South Lake Avenue in Duluth, Minn., according to an announcement by John Unger, Coolerator national service manager.

The service department's general offices as well as parts and repair divisions will be moved to the new location, which will occupy more than 7,000 square feet of floor space. Space vacated at the factory will be utilized by production facilities.

tioning equipment and the selection of the equipment. Proper control and air distribution also were given prominent places on the program.

One of the chief purposes of the conference was to bring together representatives of the industry, engineers, architects, and contractors, for the purpose of discussion problems of mutual interest in connection with the installation of air conditioning systems in Florida.

NEW WHOLESALE ENTERS N.Y. AREA

Abco Refrigeration Supply Corp. has just announced the opening of a refrigeration and air conditioning supply house at 1615 Second Ave., New York City.

Personnel of this company have long been associated with refrigeration jobbing operations in the Metropolitan New York area. Jules Gottlieb is president and sales manager; Dave Danto is sec.-treas. and purchasing agent, and Joe Schofield is store manager.

FLA. COLLEGE HOLDS COOLING COURSE

First air conditioning conference in Florida was conducted recently by the University of Florida through its engineering and industrial experiment station.

The course, under the direction of the mechanical engineering department, covered such subjects as the calculations of capacity requirements of air condi-

GRAND RAPIDS BRASS presents . . .

Packaged HARDWARE

COMPLETE WITH SCREWS

EASY TO STOCK . . . SIMPLE TO INSTALL



MR. JOBBER!

Packaged replacements are easy to stock, neat to store. Contents identified on end of every box to simplify inventories . . . facilitate reordering and stock control.



MR. SERVICEMAN!

Replacement hardware now available complete with chromium plated brass screws, neatly packaged for your convenience. Remember there's 40% profit for you.



**SUPERIOR IN QUALITY
matchless in performance**

**THE LOCK WITH THE LIVING ACTION
WHEN IT TRIPS — IT GRIPS.**

**Hinges . . . for lifetime
service**

Grand Rapids Brass
COMPANY

GRAND RAPIDS 4, MICHIGAN

A DIVISION OF
CRAMPTON MANUFACTURING COMPANY



MOISTURE PROBLEMS . . .

Continued from page 43

the service gauge, the entire system is **ONLY EVACUATED** by the usual method of opening the discharge service port and closing the condenser side. The portable vacuum pump is essential for pulling a vacuum on some highside float and sealed units.

An electric magnet is sometimes used to raise the float for ordinary methods; or, in the case of the Kelvinator type float having a service

valve at the top, the charging hose from the lowside service gauge is connected, resulting in a complete system under vacuum.

Immediately after evacuating the air down to 25 inches vacuum or better, the discharge service port is plugged and the entire system charged with gas vapor to bring the pressure to 60 pounds. The discharge service valve is back-seated after a short purging of air trapped in the compressor head.

Methyl chloride is efficiently substituted for SO₂ in this step of shop

service operations, later being evacuated. Halide leak tests are thoroughly carried out over the entire system, combing every joint for any possible trace of a leak.

In the case of flare connections, "frost expansion" is the most common cause of various types of systems failing in one form or another. Whether the flare nut is of the short type or of one of the special frost-proof designs, subjection to temperatures from 10 to 30 F will bring about a slight "creepage," if not "frost dimples" even to the extent of almost completely collapsing the smaller sizes of tubing, before the slightest indication of a leak is apparent.

A thorough sealing-off of the space between the tubing and flare nut with Tite-Seal is the best safeguard against frost expansion. A thick sloping layer is applied with the finger, after which a glossy coat is obtained with a small amount of methyl alcohol. This solvent is also used, but sparingly to avoid corrosion, for cleaning the tools and hands after this procedure.

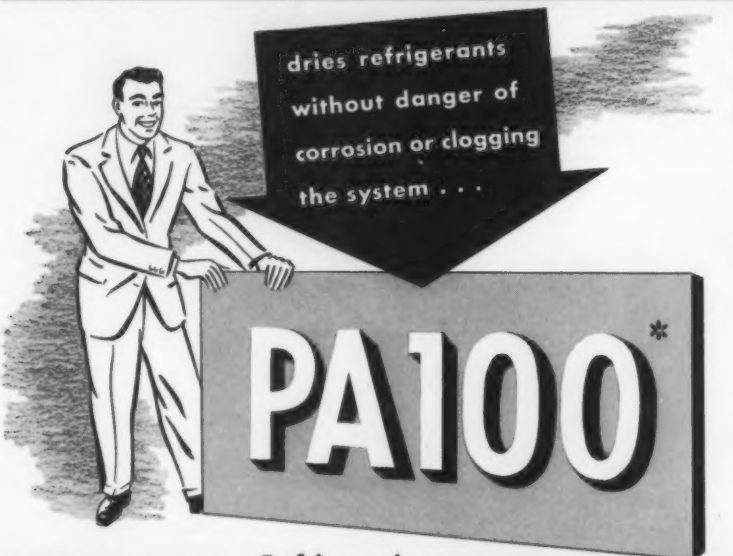
High vacuum leak tests are indeed impressive, but they are definitely deceiving and a sure invitation to pulling in moisture. Secondly, if there is a bad leak, such as a new seal not yet run in, its exact location cannot be detected with vacuum. For these reasons, it is exceedingly important to carry out the above procedure of shop or field evacuation.

In conclusion, we all more or less accept or interpret something in relation to our past experience. For this reason, the information outlined here has been presented in a non-technical language, yet in a straight-to-the-point manner.

The man who *does* the service work certainly has little time for impressive talk or experimenting with new gadgets or ideas. In view of this, the principle objective of this series of articles is to assist the serviceman by merely reviewing the every-day routine from a different angle.

McCUNE TO DISTRIBUTE STEINHORST FREEZERS

McCune & Co., of Youngstown, Ohio, has been appointed distributor in western Pennsylvania, Ohio, and West Virginia for the line of freezers and milk coolers manufactured by Emil Steinhorst & Sons.



DAVISON Refrigeration Grade SILICA GEL

processed especially for the dehydration of refrigerants



Maximum capacity . . . Instant action . . . Dust-free drying . . . Removal of acids and corrosive compounds . . . Freedom from caking or deliquescing . . . Freedom from channeling of refrigerant . . . Will not attack metals or alloys.

And PA-100 cannot corrode the system. Dryers charged with PA-100 may be installed and left in the system without danger of corrosive attack.

No wonder PA-100 is the choice of leading refrigeration service engineers.

Ask your jobber for dehydrators charged with PA-100 . . . or for the bulk can with the blue label.

*T.M. REG. APP. FOR

THE DAVISON CHEMICAL CORPORATION

Progress through Chemistry



BALTIMORE-3, MD.

PIONEERS AND DEVELOPERS OF SILICA GEL

Canadian exclusive agents for DAVISON SILICA GEL:

CANADIAN INDUSTRIES LIMITED, Sales Division—Chemicals Department

TELEPHONE STATIONS . . .

Continued from page 47

contributing factor to a secondary maintenance problem in which dust and lint combine with the high humidities in fouling contacts to a point interfering with their normal functioning. The dust is made possible by the high-heat potential around the electrical coils, etc., and is usually distributed from its original location to the contacts by gravity.

Temperature

Telephone relay stations or repeater stations frequently are located out in the country in isolated locations. These outlying stations do not have regular workmen in them; in fact they may be visited only occasionally by service men. Such stations will not have water available for the condensers of air conditioning equipment and may not contain any heating equipment either.

In most cases there are a number of vacuum tubes in these repeater

necessary. It is a known fact that the tedious task of panelboard work on maintenance cannot be of as high quality when the working conditions are unfavorable as when the temperature is within reasonable limits.

In locations where the temperature is always hot the conditioning of relay or repeater stations becomes a simple problem of cooling, drying and dust removal. In climates that are always cold the problem becomes one of heating and dust removal. In many climates, however, we encoun-

ter both high and low temperatures, high and low relative humidities and, during certain portions of the year, heavy dust content in the air. These present a challenge to the installing and servicing engineer.

Here are some recommendations:

In cities where relay rooms are a part of a regular telephone building, air conditioning will be desirable for the entire building and the relay room will be included. In isolated locations, complete air conditioning will not be necessary since the humid-



Fast, Efficient Service on Electrimatic FORGED FLARE NUTS AND FITTINGS

Your order for Electrimatic Forged Flare Nuts and Fittings will receive prompt, careful attention. Supplies are plentiful now and your wholesaler can fill your needs immediately.

Electrimatic Forged Flare Nuts and Fittings are finest quality refrigeration grade, precision made from hot forged brass or extruded rod. Unaffected by refrigeration chemicals. Seepage proof. Packed with cardboard ferrules protecting all outside flare connections to reach you in perfect condition.

You get the same fast service on
Electrimatic's full line of top
quality Automatic Valves, Driers,
Strainers, Charging Lines, Quick
Couplers and accessory items.

ASK YOUR WHOLESALER

Electrimatic

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CHICAGO 16, ILL.

CANADA—2025 ADDINGTON AVE., MONTREAL

GENERAL Electric's 4-cu. ft. apartment-house-size refrigerator is being made available for general retail distribution, it has been announced by A. G. Chaffer, sales manager of the company's household refrigerator division. Increased demand for a small refrigerator for use in summer cottages, private offices, rumpus rooms, and butlers' pantries occasioned the decision, Chaffer said.

Unusual feature of the refrigerator is that it can be completely built in at top, back and sides since ventilation for the mechanism is handled through a vent in the front of the cabinet. The 34½ inch height of the all-steel cabinet permits installation under a standard 36-inch drainboard or kitchen work surface. The refrigerator carries a recommended national retail price of \$232.

stations, so that the heat given off by these tubes and other electrical equipment may be considerable. This heat may be sufficient to keep the temperature above freezing for all outside conditions, but even if it should not, there is normally nothing in one of these repeater stations that would be damaged by freezing temperatures.

Irrespective of how well designed or constructed a relay or repeater room may be, however, there are still periods when regular maintenance is

ity requirement will be the principal one. The cooling problems here will be slightly different because the lack of water will require the use of air-cooled condensers.

Many requests for air conditioning of repeater stations seem to follow a general pattern. The building is usually a one story affair approximately 35 feet square. The wall construction is generally brick or vitrified tile. The telephone equipment has a heat generating capacity of approximately 6000 watts.

Formerly the requests were for a maximum humidity of 60% with no temperature limitation. More recent developments have proven that a minimum of 45 F and a maximum of 100 F has proven worth the additional construction and operation cost. In many instances it has been reported that reduced maintenance cost on the telephone equipment has practically offset the cost of conditioning operation.

In a territory requiring heating and cooling, dehumidification and

dust removal, an installation embodying three distinct phases of operation would be advisable:

1. During cold weather the unit would remain off and the internal heat of the telephone equipment would maintain a satisfactory temperature and relative humidity, providing the room is properly constructed and insulated.

2. When the outdoor temperatures are moderate to mild, the conditioning unit would operate from a dew-point control to remove the major portion of the latent load. The heat from the air conditioning unit's condenser would be dissipated into the conditioned area to offset the cooling effect of the humidity removal.

3. Whenever the temperatures inside the building exceed 80 F, a thermostat would operate the conditioning unit as a conventional air conditioning installation.

Dust Removal

Many systems of dust removal have been tried, and in all cases the results obtained have been in direct proportion to the thoroughness with which the problem was approached. It is the consensus that dry filters or electric precipitation are the best methods, but here are some of the arguments pro and con for all types of dust removal.

Air Washing (with water): This method is very efficient in the removal of all types of solids from the air but it has the very undesirable feature of increasing the relative humidity.

Air Washing (with oil): This method is very efficient in the removal of solids from the air but some authorities feel that certain wax or oily compounds remain suspended in the filtered air and, in time, result in fouled contact points.

Precipitation (electric): This method has many features to be desired as a dust remover. It works best in relatively clean air where the chief objective is the removal of the last traces of suspended solids. Precipitations used in conjunction with filters can be relied upon to remove almost the entire dust content of any atmosphere. The chief objection to this type of cleaning is the high installation cost.

Filtration: In general it has been found that filtration, by the use of dry filters, is more popular than all



... SIL-FOS brazing Copper Tubing

Common experience leads to common practice. It has been common experience throughout the Refrigeration Industry that brazing with SIL-FOS is a thoroughly dependable way to join copper tubing—that it consistently makes strong, permanently leak-tight, practically indestructible joints—that it's unusually simple, fast and economical. Which explains why it is now common practice throughout the Industry, to use this low-temperature silver brazing alloy, not only for the original production of all kinds of equipment made of copper tubing, but also for installation and repair work. BULLETIN 12-A will give you the complete picture of SIL-FOS brazing and show you where and how you can profitably use it. Write for a copy today.

* In SIL-FOS brazing this big cooling coil, heating is done faster and more uniformly by having operators work on opposite sides.

HANDY & HARMAN

82 FULTON STREET NEW YORK 7, N. Y.

Bridgport, Conn. • Chicago, Ill. • Los Angeles, Cal. • Providence, R. I. • Toronto, Canada
Agents in Principal Cities

other types. It is a known fact that this type of air cleaning is not as thorough as some of the other types mentioned, but installation cost is low, maintenance is simple, there is no "carry over" as in the case of oil or water filtration, and the results are, in most cases, satisfactory.

KNOWLES NAMED TESCO FIELD ENGINEER

Jerry Knowles has been appointed field engineer for Tesco Distributors, parts wholesaler, to serve the north Jersey territory. For the past eight years Knowles has been with Brunner as sales engineer in the mid-western area.

Tesco recently opened a new branch store in New Brunswick, N. J., and also has purchased the business of Farrel & Co., Jersey City, liquidating the latter business and absorbing the merchandise in their Union City, N. J., branch.

McCOY NAMED TO EDIT APPLICATIONS DATA BOOK

D. C. McCoy, refrigeration and frozen food authority of Frigidaire Division of General Motors, has been named editor-in-chief of the 1950 Refrigeration Applications Edition of the Refrigerating Data Book, published periodically by the American Society of Refrigeration Engineers.

McCoy served as associate editor of the Refrigerating Data Book in 1946, was chairman of the awards committee of the society in 1947 and 1948, and is a member of the council of the society.

ENGINEERING procedures now available can be used in putting into effect the new American Standard Allowable Concentration for Methyl Chloride, according to the American Standards Association which has just announced approval of the standard.

This is the eighteenth in the series of national standards that define the amount of various toxic dust and gases that can safely be permitted in the air of work places.

The standards are being developed under the procedure of the American Standards Association by a committee of scientists and medical men with national reputations for work in improving industrial health conditions.

FOOD FOR SALES . . .

Continued from page 37

economies effected by the freezer pay for the freezer," than on the conventional appeal to convenience, pride of ownership, etc., was conceived and worked out by Paul P. Stubbs, assistant sales manager of Ramsey-Bennett Co. Organized and put into effect during November, 1948, the Freezer Economy Club has a growing membership of over 5000, and has in-

creased the sale of home freezers proportionately.

Made retroactive to old as well as new customers, the Freezer Economy Club involves considerable added detail work, but it has been enthusiastically received by Ramsey-Bennett dealers, and the results in increased freezer sales have more than justified the extra efforts required to make it a successful promotion.

**BUY FROM YOUR
REFRIGERATION WHOLESALER**



*Goodbye
to*
**ALL
MOISTURE
IN ANY
REFRIGERATING
SYSTEM**

Pictured above is THAWZONE being added to the refrigerant via the evaporator. If desired, it can be added to other parts of the system also, such as the crankcase, liquid line, etc. But wherever you inject THAWZONE, it travels throughout the system, searching out and destroying every trace of moisture chemically.

Ask yourself this: Can the ordinary fixed dehydrator do a 100% job in getting rid of moisture? Remember that moisture becomes trapped in out-of-the-way places and cannot move around. For this reason, the dehydrant must go to the moisture . . . possible only with a liquid that mixes and travels with the refrigerant. The answer? THAWZONE, of course!

Your wholesaler carries THAWZONE
*TRADE MARK REG. U. S. PAT. OFF.

THE MOVING DEHYDRANT

HIGHSIDE CHEMICALS CO.
10 COLFAX AVE. CLIFTON, N. J.

ALSO MAKERS OF

TRACE*
REFRIGERANT
LEAK DETECTOR

OPERATION OVERHAUL . . .

Continued from page 41

the sides, backs, and bottoms of metal cabinets in another major repair job. A complete department was set up for the completion of this big item. The metal cabinet that did not have a chink in its porcelain was a rarity. Bill Bodenhamer, general manager of Marshall Webb Co., estimated that 95% of the box had chips or cracks in their exterior finish.

One of the really prodigious tasks

was handled by the gasket department. As the gaskets went, so went the project. The gasket material available regulated the number of reconditioned, refinished refrigerators turned out each day. Fitting the right gasket into the right box was difficult because often the material needed was not readily obtainable. This difficulty "bottlenecked" the whole operation, for of course not until the door was replaced and the proper seal obtained could the refrigeration mechanic obtain a temperature recording.

The motor of each unit was dis-

assembled. Bushings, brushes, brush holders, condensers, ball bearings, and leads, together with stationary and rotary switches, were the chief concern of the motor workers. Special bushings were turned on a lathe, and also commutators were rebalanced in this same way.

Common Defects Listed

Most common defects found in the motors were worn piston rings and connecting rods. About one-fourth of the seals leaked and the remainder required resurfacing.

At the test bench a normal operation was performed. The oil was checked, the controls set, head and back pressures were regulated, refrigerant charts were noted and such details as belt tensions, vibrations, and pulley alignment checked and corrected.

Upon being disassembled the coils of these refrigerators usually showed an inefficient expansion valve in three out of 10 cases. In the test, the compressor was hooked to the coil and the refrigeration cycle completed. The blower type motors and its fans, surprisingly enough, were seldom found to be in need of repair or adjustment. At the end of the test the drip pan was covered with new asphalt and the whole unit reassembled and sent back to its refrigerator.

The doors had to be inspected for lack of insulation and new fiber glass was installed where needed. All hinges, strikers, latches, and other hardware was checked and repaired.

4-Hour Test Is Run

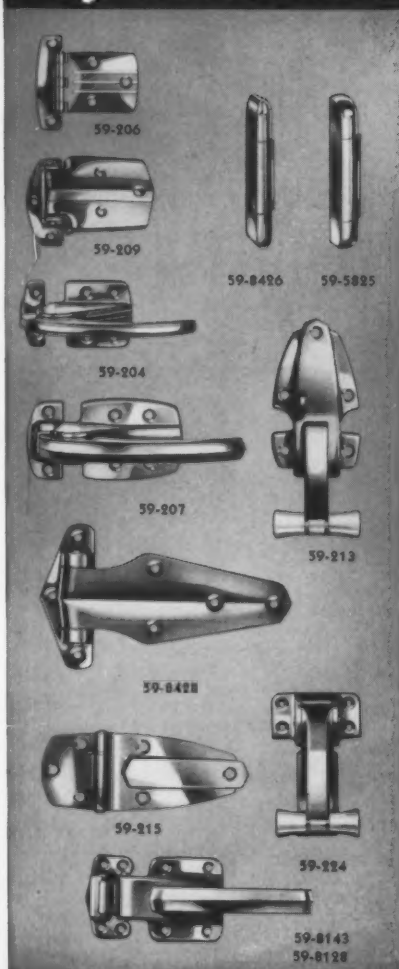
In filling in cracks in the porcelain, metal putty was used to fill out the chinks before paint was applied. A single coat of flat white was necessary before two coatings of enamel were sprayed on. In the case of wooden refrigerators, sanding was necessary to rid the box of the old paint.

When each unit was tightened down to the last nut, bolt, and screw, a four-hour test was made. The temperature reading was required to stay between 35 and 40 degrees as a test of cooling efficiency.

Once each box passed the final test, it was ready for crating. Waterproof paper was used to protect the cases from exposure. The boxes then were marked and crated before shipment to their eventual destinations.

REFRIGERATOR HARDWARE

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DESIGNED FOR A VARIETY OF USES

Extensively field-proven on commercial and domestic applications, these matched designs of chromium plated refrigerator hardware consistently "ring the bell" with users. Ideal for Reach-in Cabinets, Display Cases, Back Bars, Florists Boxes, Bottled Beverage Coolers, Draft Beer Equipment, Coin-Operated Refrigerated Dispensing Machines, Milk Coolers, Low Temperature horizontal or vertical Cabinets, Stokers and many other units of refrigeration equipment.

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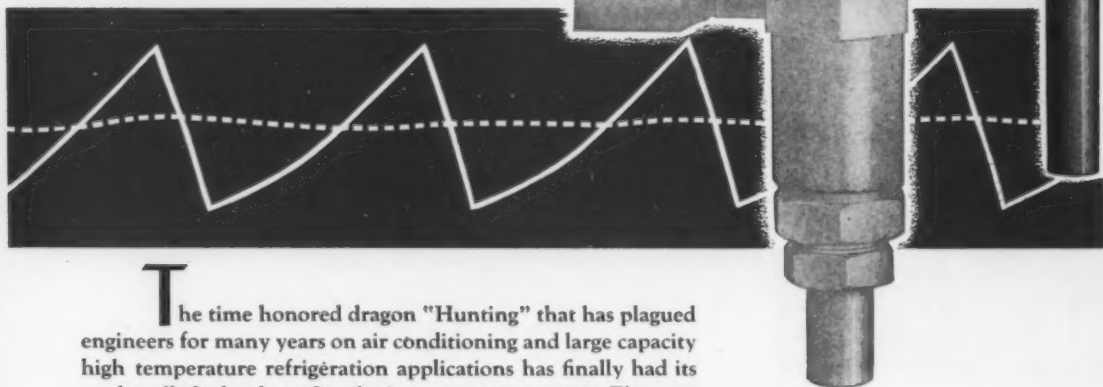
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**makes Maximum Evaporator Capacity
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Installation
at no extra cost to you!**



The time honored dragon "Hunting" that has plagued engineers for many years on air conditioning and large capacity high temperature refrigeration applications has finally had its teeth pulled; thanks to Sporlan's new FLOW MASTER Element.

In spite of careful design, hunting is inherent in many applications due to the physical dimensions of the evaporator, and the relationship between the evaporator, compressor and expansion valve.

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How does the new Sporlan FLOW MASTER Element do it? Through the use of Sporlan Thermal Ballast (*Patent applied for*).

How do you get them at no extra cost? ... Just be sure to order Sporlan valves with Type G Thermostatic elements. All Sporlan Type G elements are now standard equipped with this amazing new feature.

Remember ... Just as you have reduced hunting for many years on all refrigeration installations below 35° F. by using Sporlan Type C and Z charges, you can now be sure of maximum evaporator capacities with negligible hunting on all air conditioning or large capacity high temperature refrigeration applications when you install Sporlan Thermostatic Expansion Valves with the new FLOW MASTER element.



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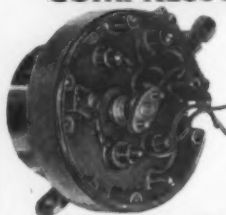
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Useful LITERATURE

The publications listed below are available to readers without charge. Simply list on the postcard provided in this issue the key numbers of the items you wish to receive. Your requests will be forwarded directly to the companies concerned.

401—Metal-Clad Gaskets . . . A four-page bulletin (No. 15-48) illustrating and describing the "Clad-Seal" metal-clad gaskets produced by Lead Alloy Products Co. Explains construction and applications features, other engineering details.

402—Pocket-Pak . . . A handy new box developed by Fastener Corp., Chicago, which holds about 1,000 staples and fits easily into the pocket. Provides a convenient way for the refrigeration service man to carry the staples he needs on a job. Furnished free upon request.

403—Tube Cutter Bulletin . . . A bulletin (A44) published by Parker Appliance Co., Cleveland, describing hand tools for precision cut-off of copper, brass, aluminum and steel tubing, $\frac{3}{8}$ " to 2" o.d. Construction features and one-hand use of the lightweight Parker tube cutters are described and illustrated.

404—Multi-Cylinder Compressors . . . An attractive two-color bulletin describing the Vilter Mfg. Co.'s line of multiple cylinder compressors. Designated as bulletin No. 912, the literature outlines construction features and other pertinent information on the units.

405—Oil Testing Data . . . A new circular (No. 300) issued by the Gerin Corp., Red Bank, N. J., on equipment and methods for testing the condition of lubricating oil. It illustrates the portable oil inspection kit recently announced by the company whereby any mechanic can quickly measure the contaminants occurring in lubricating oil during use. Circular is titled "Required Equipment for Lubrication Control."

406—Liquid Cooling Units . . . A condensed catalog (No. 25-B) issued by Acme Industries, Inc., Jackson, Mich., illustrating and describing its line of "Hi-Peak" coolers, shell and coil remote type. Construction features are outlined, and several pages of selection tables are included.

407—Water Cooling Equipment . . . A new loose-leaf catalog on water cooling equipment and industrial spray nozzles, issued by Binks Mfg. Co., Chicago. Illustrates and describes the complete Binks line of spray nozzles, and vertical and horizontal cooling towers of all sizes and cooling capacities. Includes complete specifications and drawings for deck and spray filled towers, operating on natural or mechanical draft principle.

408—Self-Service Dairy Cases . . . A new sixteen-page booklet on self-service dairy refrigerators, issued by C. V. Hill & Co., Trenton, N. J. In addition to illustrating and describing single, double and triple deck models it contains sections on table and accessories for cutting and wrapping bulk cheese, how to cut for self-service, and how to label and wrap for self-service.

409—Offset Ratchet Screwdriver . . . A sheet describing the new offset ratchet screwdriver manufactured by the Aero Tool Co., Los Angeles. Ratchet arrangement is said to permit use of this tool in confined spaces such as are often encountered in refrigeration work.

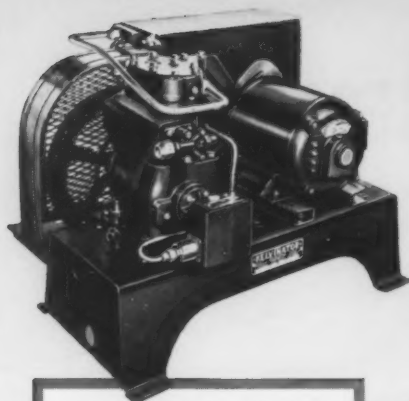
410—Service Manual . . . A leaflet describing the recently published "Refrigeration Serviceman's Manual" issued by Wilcox & Follett Co., Chicago. Gives table of contents of the volume, sample page illustrations, and other pertinent data.

411—"Package" Cooling Towers . . . A bulletin (5.6.081) issued by J. F. Pritchard & Co., Kansas City, Mo., illustrating and describing its Series "P" package-type cooling tower. The towers are rated at 50 gpm, designed cooling service for refrigeration, air conditioning, and the other uses dependent upon low cost cold water. Construction details are given, together with capacity table and dimensional specifications.

412—Air Conditioning Coils . . . A catalog (AC173) issued by Kramer-Trenton Co. illustrating and describing its line of cooling surface for air conditioning use. Includes information on direct expansion coils, steam coils, the new "158" surface, and numerous tables and specifications designed to simplify selection of proper coils for various applications.

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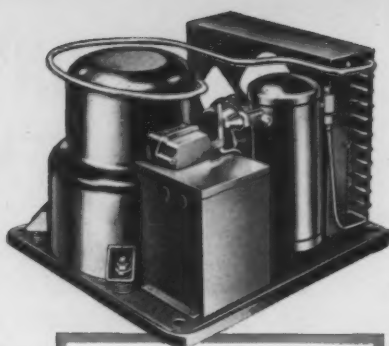
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Kelvinator Open Type Condensing Units ($\frac{1}{4}$ H.P. to 1 H.P.)



Kelvinator Water Coolers (Pressure and Bubbler Types)

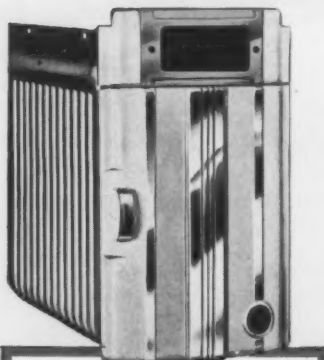


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Profit-minded dealers and service men know it pays to sell *quality* products. That's why they choose Kelvinator—the name that always sells . . . always satisfies. And for the *extra quality* that goes into every Kelvinator product,

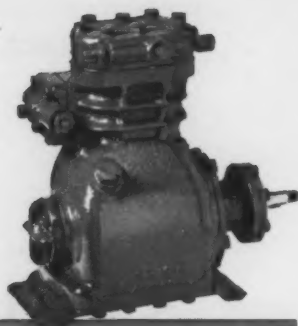
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OUTSTANDING CHARACTERISTICS OF "FREON" REFRIGERANTS

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- ACID FREE
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- AVAILABILITY

The noncorrosive characteristic of "Freon" refrigerants is one of the major reasons why manufacturers design their air conditioning and refrigeration equipment to use these refrigerants.

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Kinetic Chemicals, Inc.
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FREON *SAFE* REFRIGERANTS

"Freon" is Kinetic's registered trade mark for its fluorinated hydrocarbon refrigerants.

NEW Products

For further information on any of these products, simply list on the postcard provided in this issue the key numbers of the items in which you are interested. Your requests will be forwarded directly to the companies concerned.

Commercial Cases • • • P-390

Product: Double-duty display case and sectional walk-in refrigerator cabinet.

Manufacturer: Howard Refrigerator Co., Philadelphia, Pa.

Features: Sectional walk-in is constructed of heavy kiln dried lumber impregnated to resist moisture or warping. Flooring is of solid wood encased in multi-layers of insulation; all sections are enclosed in rigid metal with 4" of insulation.

New double-duty display case has top, front, and inside display ends of white porcelain enamel. Two sizes are available in this model: 19" and 43" high, 34½" and 35" wide.

Comfort Cooler • • • • • P-391

Product: Comf-E-Fex remote type comfort cooler.

Manufacturer: Refrigeration Appliances, Inc., Chicago, Ill.

Features: This is a ceiling type unit for use with remote condensing units. Designed for applications where duct work is either impractical or undesirable. Has sturdy galvanized steel housing with bronze hammer baked finish. Throwaway type filter can be removed through specially designed filter section which also provides access to interior. Housing is insulated for quiet opera-



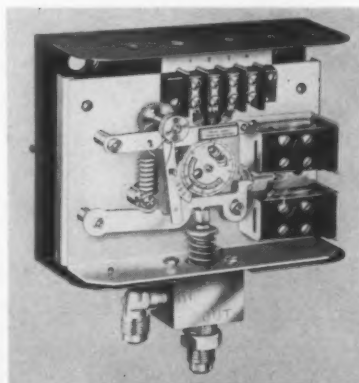
tion and to prevent sweating; compound pitch drain pan sloping to side and rear for positive drainage. Available in four sizes: ¾, 1, 2 and 3 tons, with heating coils for use with water or steam optional. Can be connected in series for use with single condensing unit.

Hot Gas Defroster • • • P-392

Product: Completely automatic self-contained unit for rapid defrosting of commercial evaporators.

Manufacturer: Penn Electric Switch Co., Goshen, Ind.

Features: Series 321 automatic hot gas defroster is self-contained



single unit incorporating timed mechanical valve and switches which regulate automatically cycling of compressor on hot gas cycle to provide complete coil defrosting. Hot gas is supplied to coil internally for speedy defrost with minimum change of temperature in stored product. Recommended for self-contained or remote type installations up to and including 2 hp. May be applied on most types of coil installations where drains are available or can be applied, and where stored products are not in contact with coils or plates. Present models available for non-cor-

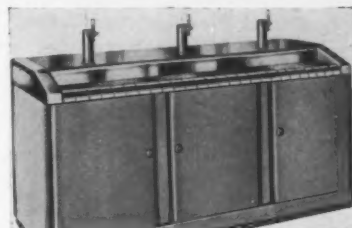
rosive refrigerants only. Now used by some case manufacturers; wholesalers stocking dual voltage model suitable for either 115 v. or 230 v. 60 cycle service for general usage and modernization of variety of present installations.

Beer Dispenser • • • • • P-393

Product: New keg cooler and beer dispenser.

Manufacturer: United Refrigerator Co., Hudson, Wis.

Features: Cooler is of all steel construction and features stainless



steel top and self-contained hermetically sealed condensing unit for plug-in models. Is offered in both self-contained and remote models in two and three-keg sizes. Also featured is absence of any protruding handles and hinges. New chrome push-button door latches are built flush with cabinet, providing easy and safe access. All hermetically sealed units used in United models are covered by 5-year warranty at no extra cost to purchaser.

Dehydrators • • • • • P-394

Product: New line of DFN dehydrators specially designed to use Du-cal Drierite.

Manufacturer: McIntire Connector Co., Newark, N. J.

Features: Chief advantage of the new dehydrators, according to the manufacturer, is that drying capacity is double that of previous standard for any given size dehydrator. This means twice the protection when used same size as before, or that smaller dehydrators can be used to do an equal job. Single-pass drying is accomplished in liquid line. Operation is efficient at refrigerant temperatures up to 150 F. May be used with all refrigerants. Changes in construction have been made to permit free flow without pressure drop and to provide most efficient

filtering action. Of all copper and brass construction, new Du-Cal driers are lacquered blue to distinguish them from others in line. Available at present in factory sealed types, sizes from 1/3 to 3 hp, with SAE connections of 1/4, 3/8 and 1/2". Larger sizes are to be available later. Also available in cartridges for DFN demountable type dehydrators.

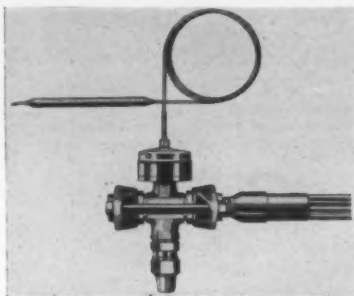
Expansion Valve • • • • P-395

Product: New Model 216 A-P thermostatic expansion valve.

Manufacturer: Automatic Products Co., Milwaukee, Wis.

Features: Multi-outlet distributor makes possible accurate, uniform feeding of refrigerant to the coil. Any number of outlets, up to 12, can be fed simultaneously. Multi-outlet distributors, in "straight" or "mushroom" types, can be hooked up to Model 216 after they are connected to the coil. Principal advantage of new distributor is that it leads to top coil efficiency for maximum refrigeration. Valve itself is small and easily handled, a liquid-charged unit

that can be mounted in any position or ambient temperature with no effect on bulb accuracy. It is equipped with extra diaphragm unit that limits operating suction pressure to a 55-lb. set-



ting; diaphragm counteracts main diaphragm if suction pressure becomes excessive. When there is no longer an overload valve reverts to normal operation, controlling superheat with thermostatic bulb and main diaphragm. Valve is set at standard superheat but has adjustable range for any application. Capacities are 3.6, 7 and 11 tons; with multi-coil distributor, capacities are 3, 6.5 and 10 tons.

Vibration Eliminator • • P-396

Product: Vibration eliminator.

Manufacturer: Techniflex Corp., Port Jervis, N. Y.

Features: Incorporates new construction features designed to provide greater strength in a lighter weight. Employs a mechanically swaged ring to hold braid to flexible metal hose, eliminating former brazing process which reduced tensile strength of braid. Fusing of nipple to hose with silver solder also as replacement for brazing is said to eliminate failure of corrugations at ends of metal hose.

Glass Chiller • • • • • P-397

Product: Glass chiller, for mugs, steins, glasses, etc.

Manufacturer: La Crosse Cooler Co., La Crosse, Wis.

Features: This all-in-one unit has been especially designed to answer the demand where present legislation is now outlawing wet refrigeration of glasses. Unit fits under standard (42") bar, has top-sliding doors, two separate compartments individually accessible. By using horizontal tier trays glasses may be arranged in

... specially designed to eliminate
NOISE and VIBRATION
... throughout ANY refrigerant system!



THE NEW PACKLESS VIBRATION ABSORBER

especially designed and manufactured for the specific needs of the air conditioning and refrigeration industries.

Noise from excess vibration, caused by pulsating gases or liquids throughout any system, is entirely eliminated by the design of the Packless Vibration Absorber. In addition, these Vibration Absorbers absorb line shock and prevent damage and resultant service interruption from broken refrigerant lines. Unconditionally guaranteed on all rated applications when properly installed.

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 Write for our new Bulletin VA-2 containing complete details, description, illustrated application data, operating specifications and suggested installation procedure. No obligation, of course.



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the smart dealer who starts selling early. They are newly designed for better-than-ever performance... priced lower than ever... putting York Quality well within reach of all.

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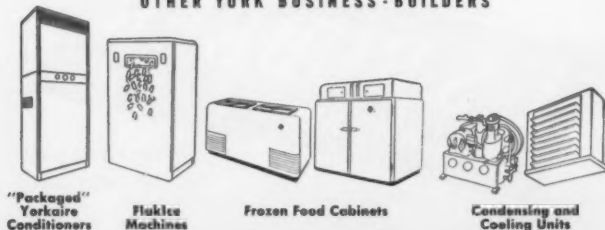
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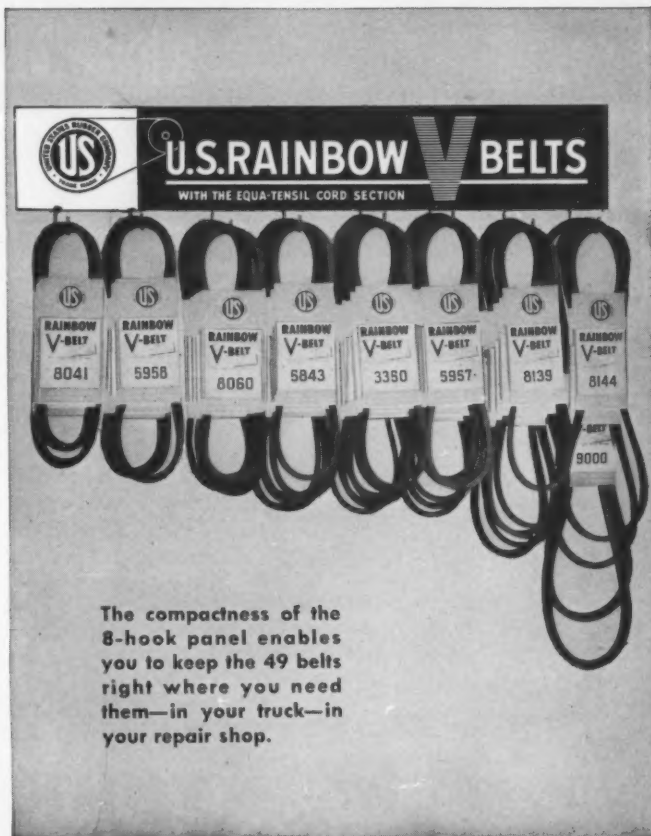
The 49 V-Belts in greatest demand by Refrigeration Service Men have been selected for this U. S. Rainbow V-Belt assortment.

With this compact stock you can be ready with the exact belt needed. These 49 cover service on hundreds of domestic and commercial refrigeration units, ice-cream machines, frozen-food plants, air-conditioning systems and other allied equipment.

Each belt has the unique Equa-Tensil Cord Section—the U. S. Rubber development which provides great pull and endurance.

Order from your Jobber, or for more information write Mechanical Goods Division, United States Rubber Company, 1230 Avenue of the Americas, New York 20, N. Y.

U. S. RAINBOW—The V-BELT With The Equa-Tensil Cord Section



A PRODUCT OF



UNITED STATES
RUBBER COMPANY

upright position in layers, or mugs may be stacked sideways. Chills one compartment with 2-lb. mugs from 75 F to average temperature of 16 F in 2¼ hours; lighter glasses chill proportionately. Available in both self-contained and remote models, with stainless steel front, ends and top or



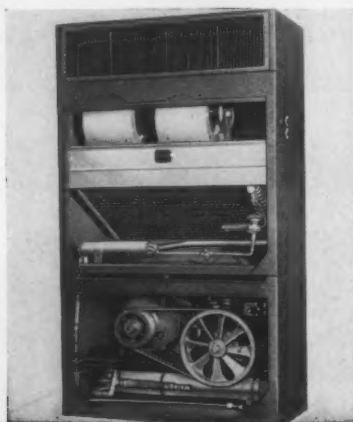
finished entirely in baked black enamel with stainless steel doors and trim. On special order, units can be furnished in baked blue enamel. Cooling is by three cold plates, one in each end and one in center serving as a partition. Self-contained models have 1/3 hp condensing unit. Insulation is 4" Fiberglas.

Air Conditioner • • • • • P-398

Product: New 10-ton air conditioning unit.

Manufacturer: Typhoon Air Conditioning Co., Inc., Brooklyn, N. Y.

Features: New model supplements Typhoon's present range of 1½, 2, 3, 5 and 7½-ton units. A free standing unit, the new 10-ton conditioner is completely self-contained, requiring no duct work. All moving parts are readily accessible. Over-all dimensions are 27" deep x 52" wide x



93" high. A two-part cabinet makes it possible for upper half to be placed in conditioned area with high side at a remote point. Low speed operation and fully insulated cabinet make for quiet, vibration-free operation. Unit delivers 125,000 Btu at 36 F suction temperature and 105 F condensing temperature. Condenser and tube and fin of cooling coil are of all-copper construction.

**BUY FROM YOUR
REFRIGERATION WHOLESALE**

Service Body • • • • • P-399

Product: "Service-Master" all-purpose service body for use in refrigeration installation and maintenance work.

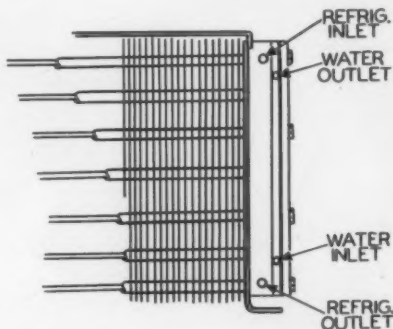
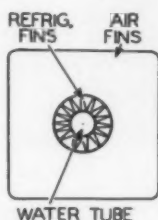
Manufacturer: McCabe - Powers Auto Body Co., St. Louis, Mo.

Features: Provides facilities to literally carry a complete workshop to the job site. Compartments on either side of body are fitted with shelves, trays, and parts bins and may be individually locked. Shelves and bin partitions may be adjusted or removed. Body loading space has



Air economy plus water efficiency with minimum use of water automatically used when air temperature reaches 80°F. This newly developed condenser wins new customers and much goodwill.

Cleanable water tubes. Economical to install and operate. Saves space. Readily adaptable. Attractive appearance. Write for literature.



Fins in refrigerant tube transfer heat through many extra square feet of surface. Maximum outside air surfaces provide efficient air cooling. When air temperature reaches 80°F. water valve operates.

THE HEAT-X-CHANGER CO., INC.
415 Lexington Avenue, New York 17, N. Y. Brewster, N. Y.

one-piece ribbed steel floor and is greater in area than standard pick-up body. Ladder rack, pipe racks, heavy



duty rear bumper and step, padded tie rails and inside tire carrier are optional equipment. The Service-Master is 48½" wide and can be mounted on ½, ¾ and 1 ton chassis.

Pilot Light • • • • • P-400

Product: New pilot light for use on instrument panels, switchboards, etc.

Manufacturer: Industrial Devices, Inc., Edgewater, N. J.

Features: Known as the "Tiny-Glow," device utilizes a neon lamp and may be used over wide range of

voltages from 75 to 250 volts ac or dc. Neon lamp guaranteed for minimum of 10,000 hours' use. Current consumption is 1/10 watt. In use, lamp provides a highly visible light; will operate under severe vibration or shock, as all connections are firmly soldered. Can be provided with any lead length required.

Bottle Vendor • • • • • P-401

Product: New automatic dry bottle vendor.

Manufacturer: Westinghouse Electric Corp., Electric Appliance Div., East Springfield, Mass.

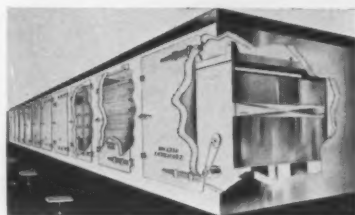
Features: Has capacity of 240 bottles, and features inclined spiral which eliminates bottle scuffing to prolong bottle life. Location of evaporator with fan and special baffle causes bottles in vending position to receive coldest blast of air. Vendor is available with coin changer which checks coins for correct diameter, thickness, etc. Unit is 78⅞ in. high, 33½ in. wide, and 29½ in. deep, weighs 650 lbs. Cabinet is insulated; 5-year warranty on hermetically sealed condensing unit,

Food Locker Unit • • • • P-402

Product: "Kold Cell" frozen food locker unit.

Manufacturer: Baker Refrigeration Corp., South Windham, Me.

Features: Locker unit is of "self-contained" type in that it is a complete insulated unit that can be installed within a store room, eliminating special building construction. Entire unit is enclosed in a heavily insulated cabinet and normal room temperature is maintained outside. It consists of standard sections built into a single over-all cabinet of vary-



ing size, depending on available space and number of lockers required.

Complete unit comprises three sections: (1) equipment section containing floor-type cooling coil and blower, (2) quick-freeze section

Hey—here's news!



TERRITORIES OPEN

AMCOIL has a full line of all copper welded cooling units for you. Write for bulletin.



AMERICAN COILS COMPANY, 360 THOMAS ST., NEWARK 5, N. J.

MAY, 1949 • COMMERCIAL REFRIGERATION

equipped with trays for processing, (3) storage lockers. On installations up to 170 lockers, half of freezing section has storage lockers; on larger installations separate locker sections are used. Each locker section has 20 lockers of 6.2 cu. ft. capacity; up to 16 storage sections can be built into a unit, allowing up to 320 lockers capacity. Height and width are 8' and 6½', respectively, with length ranging from 22 to 75'. Either Freon or ammonia refrigerating system can be used, remotely located.

Electric Carbonator • • • P-403

Product: Model CA-100 motorless electric carbonator.

Manufacturer: Prest-O-Matic Carbonator Co., Rockford, Ill.

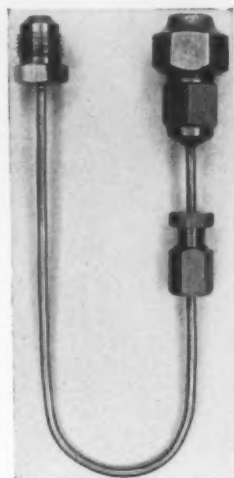
Features: Company will produce this popular model carbonator exclusively. Unit has electrically operated controls to guarantee dependable, efficient, economical operation. It is 8½ in. wide, 11 in. deep, 22 in. high and will fit conveniently into fountain, bar or cooler. Weight is 28 lbs. Produces 25 gallons of carbonated water per hour.

Capillary Tube • • • • • P-404

Product: Capillary tube.

Manufacturer: Allin Mfg. Co., Chicago, Ill.

Features: Provides a quick and simple method for proper adjustment of refrigerant flow to any load con-



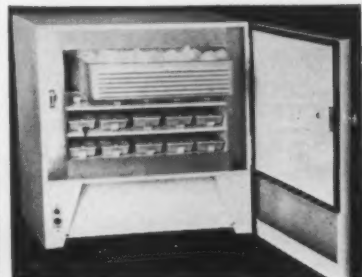
dition within its range. Eliminates cutting ordinary capillary tubing to specific length for a particular refrigerant; can be accurately set after charging the unit. Two sizes cover the complete range from 1/6 to 1 hp units. Standard fittings, provided with the tube, are silver soldered on each end of tube, minimizing connections for installation and possible leaking joints. A 150 mesh Monel screen of large area is supplied for protection of expansion orifice. Actual orifice is a straight-through design; sharp bends and/or excess tubing are eliminated.

Ice Cube Maker • • • • • P-405

Product: Lockrator ice cube maker, Model 1CE3.

Manufacturer: Stoddard Mfg. Co., Mason City, Iowa.

Features: Unit has an ice freez-



Detects
EVEN THE SMALLEST
Gas Leak
IN "JIG TIME"



TURNER

MODEL H-1

HALIDE REFRIGERANT GAS LEAK DETECTOR

Find leaks involving all chlorinated hydrocarbon refrigerants quickly and accurately with Turner's highly-sensitive Model H-1 Halide Detector. This blowtorch-type burner employs a simple chemical principle... flame becomes green whenever gas is present in the area surrounding a defective cooling unit. Designed and constructed throughout for long, dependable service. Has a flexible exploring tube for easy probing in "hard-to-get-at" places; holds one pint of alcohol fuel; measures 8" from handle to tip of burner x 7½" high x 4½" wide; can also be used as a blowtorch.

AVAILABLE FOR IMMEDIATE DELIVERY

Made by the manufacturers of nationally-known
Turner Blow Torches and Fire Pots

THE TURNER BRASS WORKS

SYCAMORE



ILLINOIS

Since 1871

ing capacity of 21 quick-release trays (42 lbs. of ice) every six hours. Trays are available for either large or small ice cubes. A pull-out removable storage pan allows storage of up to 36 lbs. of cubes. Cabinet is 35" high, 30 1/4" wide and 25 1/2" deep, allowing installation under a bar or work table. Condensing unit is 1/3 hp Tecumseh hermetic model, using Freon-22 refrigerant, and carrying 5-year warranty. Exterior is of white DuPont baked enamel. Price is \$329.50. Units can be installed in multiple if additional capacity is needed, or for convenience in large commercial establishments.

Expansion Valves • • • • P-406

Product: New thermostatic and automatic expansion valves.

Manufacturer: Peerless of America, Inc., Chicago, Ill.



Features: New thermal expansion valve is for use with Freon or methyl chloride, automatic expansion valve for Freon, methyl or sulphur dioxide. These semi-pressure-limiting valves can be used on any temperature application, high or low. New super-vapor charge provides constant bulb control; valve can be installed in any position or in any ambient temperature condition. To adjust superheat, user slides variable contact bulb up or down on horizontal suction line, superheat setting decreasing as distance of end of bulb from suction line increases.

New automatic expansion valve, actuated by variations in coil pressure, closes tightly when compressor stops and opens only when evaporator pressure is pulled down to pressure for which valve is adjusted. Recommended for use on all small, single evaporators up to 1/2 ton capacity.

Air Conditioner • • • • P-407

Product: Window-type room air conditioner.

Manufacturer: Quiet-Heet Mfg. Corp., Newark, N. J.



Features: Known as the "Quiet-Kool," this unit is powered by 1/2 hp hermetic compressor unit. Model G-5 is rated at 5850 Btu per hour, and is provided with a single fan motor operating at 1075 rpm. Steel cabinet has a hinged cover to facilitate changing the filter. Air direction may be altered to suit requirements of the room. Cabinet projects only 9 3/4 in. into the room.

BUY FROM YOUR REFRIGERATION WHOLESALER

HOW WOULD YOU SELL REFRIGERATION TO THE PROSPECT WHO SAYS

I NEED NEW
EQUIPMENT
BUT I DON'T HAVE
THE MONEY
FOR IT

He is in the habit of pay-
ing his suppliers daily....



As a result, at the end of
the month there is not
enough left to pay large
down payments and lump
sum monthly payments.

Your Answer Is THE METER PLAN OF DAILY SAVINGS

Your Customer
Deposits
Just a Few
Quarters
a Day.



METER-MATIC COIN METERS ARE:

- LOW IN PRICE
- SIMPLE TO INSTALL
- FULLY GUARANTEED



Meter-Matic DM6 Meter
Two Door Case

MAIL
THIS
COUPON
TODAY

INTERNATIONAL REGISTER CO.
2626 W. Washington Blvd.
Dept. 59-M, Chicago 12, Ill.

Please send me FREE: ☐ Meter Catalog
☐ Meter Plan for Selling Commercial Refrigeration.

Company..... Name.....
Address.....
City..... Zone..... State.....

CONTRACTORS . . .

Continued from page 44

WHEREAS, Representatives of these two organizations desire to co-operate to the end that the quality of workmanship obtainable by the public will be uniformly high;

THEREFORE, BE IT RESOLVED:

I

That the National Association of Refrigeration Contractors hereby recognizes the United Association as the only trade union possessing the sole and exclusive right to perform the

work of handling, installing, repairing and maintaining refrigeration and air conditioning systems of all kinds.

II

That the United Association hereby recognizes the National Association of Refrigeration Contractors as the bona fide organization of contractors engaged in refrigeration and air conditioning work, and further recognizes their local chapters as bargaining agents for agreements affecting wages or working conditions in the refrigeration and air conditioning field in their respective areas.

III

That in order to assure the highest uniform quality of refrigeration and

air conditioning to the public, the National Association of Refrigeration Contractors and the United Association agree to unite in providing a program of apprentice training which will continue to supply an adequate number of craftsmen fully equipped to assure the highest quality of workmanship to the consuming public.

IV

That all local chapters of the National Association of Refrigeration Contractors and all local unions of the United Association jointly cooperate in this effort to procure the highest quality of refrigeration and air conditioning for the public by recognizing their mutual obligation as described above.

BLOTTERS BEING USED IN DIRECT-MAIL DRIVE

A blotter carrying the question, "Is Your Refrigeration Equipment Being Serviced by a Member of the Contractors Association?" has been developed by the Refrigeration Contractors Association of Detroit for use by members in connection with their direct mail advertising.

The blotter itself carries no individual firm's name, but includes a reference to the telephone directory section in which member companies are listed. Cost of the promotion is being borne by the Detroit association.

NEW RULING BY WAGE AND HOURS DIVISION

The Wages and Hours Division has ruled that commissions received by service repairmen for selling large equipment (not merely repair parts in connection with the job they are doing) such as reach-in, walk-in, low temperature cabinets, etc., after hours and on their own time must, together with the time put in, be included in the determination of their rate of compensation for purposes of determining overtime they are entitled to under the Fair Labor Standards Act.

CONTRACTORS ORGANIZE IN ROCKFORD, ILL.

Refrigeration and air conditioning contractors in Rockford, Ill., have organized a local association and has applied for affiliation with the National Association of Refrigeration Contractors. Addition of the Rockford group brings to 29 the number of local contractor organizations



Simpson

390

VOLT - AMP - WATTMETER

Simpson 390 Volt-Amp-Wattmeter embraces two ranges each of voltage and current providing four wattage ranges which cover practically all types and makes of appliances. Preferred by most servicemen.

RANGES: A. C., 60 cycles—Volts: 0-150, 0-300; Amperes: 0-3, 0-15; Watts: 0-300, 0-600, 0-1500, 0-3000; price with Break-In plug and leads, and Operator's Manual \$39.50

SIMPSON ELECTRIC COMPANY

5200-18 W. Kinzie, Chicago 44, Ill.

In Canada:

Bach-Simpson, Ltd., London, Ont.



Why

and



are

Profitable
lines to sell

ESTABLISHED ACCEPTANCE — Lipman has been well known for 30 years, GR for 25.

TWO COMPLETE LINES — Lipman machines available in 1/4 thru 40 hp. — air and water cooled — with ammonia, Freon-12 and methyl chloride refrigerants. GR line includes self-contained and remote air conditioning units for commercial uses.

WELL ENGINEERED, units are moderate speed, heavy duty, rugged — perform well, stand up in service.

PROMPT DELIVERY possible on most units.

SALES HELPS consist of national advertising to consumer markets — useful sales literature — newspaper ads you can use to fit your needs — engineering service to help you . . . *real cooperation right down the line!*

Get complete information on handling the profitable Lipman and GR lines — call, wire or write Dept. R9 today.



GR 5-ton Packaged Air Conditioner.



Lipman 1/2-hp. air-cooled, Freon-12 or Methyl Chloride Condensing Unit.

GENERAL REFRIGERATION

DIVISION

YATES-AMERICAN MACHINE CO.
Beloit, Wisconsin

Lipman
AUTOMATIC REFRIGERATION

affiliated with the national contractor body.

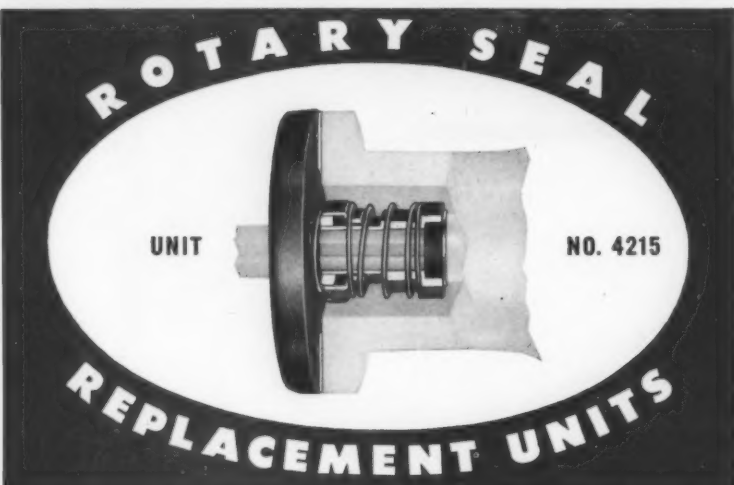
Officers of the Rockford association include: Lester L. Miller, Miller Engineering Co., president; E. Reynolds, vice president; James Best, Best Refrigeration Co., secretary-treasurer; and Roy Shipman and R. C. McCarthy, directors. Meetings are held on the fourth Thursday of each month.

**BUY FROM YOUR
REFRIGERATION WHOLESALER**

WISCONSIN ASSOCIATION ELECTS W. C. REHBEIN

W. C. Rehbein, Appleton, Wis., was elected president of the Wisconsin Association of Refrigeration Contractors at the annual meeting recently in Milwaukee. Fred Boehme, Milwaukee, was named vice president, and E. F. Anderson, Milwaukee, secretary-treasurer.

In attendance at the session on licensing were Milwaukee fire chief Edward C. Wischer, aldermen Milton McGuire and John Hass, and department building inspector Harvey Glish.

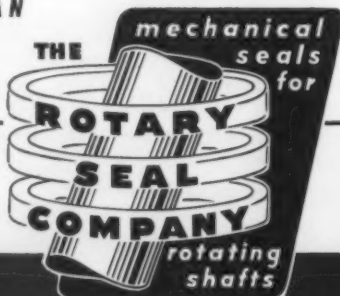


are available in a complete range of sizes—including the larger models for use in Commercial and Semi-Commercial Compressors, such as:

BAKER	CURTIS	MILLS
BRUNNER	FRIGIDAIRE	PAR
CARRIER	GENERAL ELECTRIC	UNIVERSAL COOLER
COPELAND	KELVINATOR	WESTINGHOUSE

and others

**MORE THAN
848
MODELS**



**AT ALL
LEADING
JOBBERs**

"Seal with

Certainty!"

**2020 NORTH LARRABEE STREET
CHICAGO 14, ILLINOIS, U.S.A.**

**CANADIAN AGENT: 2025 ADDINGTON AVENUE
MONTREAL 28, QUEBEC, CANADA**

A "STANDARD FORM of Agreement with Manufacturers' Agent" has been distributed to members of the Manufacturers' Agents National Association in 145 cities, throughout 40 States, District of Columbia, Canada, Cuba, and the Philippines, as the result of more than a year's intensive study by MANA of the subject of a suitable agent-and-principal contract.

The contents of this MANA agreement are divided as follows: (1) Purpose of Agreement; (2) Statement of Relationship; (3) Duration of Agreement; (4) Assignment of Agreement; (5) Territory and Scope of Operations; (6) Products, Equipment, and Services; (7) Sales Channels and Restrictions; (8) Prices, Terms, and Sales Policy; (9) Commission Rates and Computation; (10) Commission Payments; (11) Invoices and Collections; (12) Selling Aids and Supplies; (13) Handling of Inquiries and Quotations; (14) Products Guarantee, and Warranty; (15) Handling and Acceptance of Orders; (16) Shipments and Shipping Information; (17) Additional Obligations of Agent; (18) Additional Obligations of Principal; (19) Adjustment of Disputes, and Provision for Arbitration; (20) Rights upon Consummation of Agreement; (21) Rights upon Termination of Agreement; and (22) General Conditions.

The form is self-explanatory and entirely elastic, providing for the preparation and appending of Exhibits to cover variations in different fields of endeavor and all individual conditions and circumstances. What is most important, is that this form is designed to be *perfectly fair to agent and principal alike*.

To make possible a careful study of its unbiased and mutually protective provisions, Manufacturers' Agents National Association will mail one copy to any agent, or to any manufacturer or supplier, writing on its business stationery to the executive secretary of the Association at 542 South Broadway, Los Angeles 13, Calif., and mentioning this magazine.

FIVE MORE CONTRACTORS JOIN DETROIT GROUP

Five additional firms have been admitted to membership in the Refrigeration Contractors Association of Detroit. They are:

Champion Refrigeration Service (Harry B. Guest), Dayton Refrigeration Co. (Alex Masen), New Center Refrigeration (Vince Bloomster), Nortown Refrigeration (Erwin A. Barliss), and Refrigeration Engineering Co. (Harold W. Clarridge).

Here's effective VIBRATION control...



✓ REX Super-Service VIBRA-SORBERS



For small room air conditioners or huge institutional plants, CMH REX VIBRA-SORBERS keep compressor vibration and noise out of fixed lines. Tubing or piping free from the damaging effects of vibration gives better service and lasts longer... minimum noise transmission helps make satisfied customers. Made in sizes from 1/8" through 4", I.D.

Steel and stainless steel units for other vibration services are also standard assemblies.

Write for specification sheets.

NEW



CMH REFRIGERANT CHARGING LINES

are light weight, long-lived, quality charging units for all types of refrigerants. Non-deteriorating, non-corrosive, non-collapsible, non-kinking and non-seeping. Other flexible metal hose types are available for loading and unloading refrigerant.

cmh

ONE dependable
source for every
flexible metal hose
requirement.

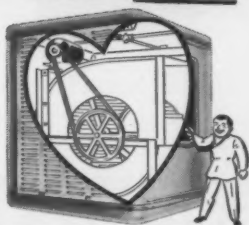
**CHICAGO METAL HOSE
CORPORATION**

Leaders in the Science of Flexonics
MAYWOOD, ILLINOIS
Plants at
Maywood, Elgin and Rock Falls, Illinois
In Canada:
Canadian Metal Hose Co., Ltd., Brampton, Ontario

THE "HEART-OF-A-COOLER" TEST PROVES

SNO-BREZE AIR COOLERS BY FAR THE BEST

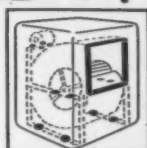
HERE'S THE
HEART OF
A COOLER



You're the
doctor
MAKE
THESE
TESTS



MOTOR: Make "squeeze test" look for shock proof mounting perfection. Gives superior quiet performance, long life operation.



BLOWER AND FAN ASSEMBLIES must be free floating-rubber cushioned to prevent vibration noise needless wear. Assures long life.



BLOWER WHEEL OR FAN for balance. Extra large units are desirable for certified air output at less power. Big economy factor.



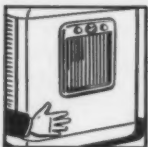
WATER PRESSURE REGULATOR should be cleanable, self adjusting to assure equal water flow to cooling pad areas. An absolute "Must."



WATER DISTRIBUTION trough and tubes should be clog proof, rust proof, adjustable — assuring thorough water coverage of pads. No dry spots.



ELECTRIC SWITCH ASSEMBLY for under-writers approval. Its location and provision for easy pump installation.



CABINET AND FRONTAL SECTION should be sturdy steel construction, rubber insulated, and finished in rust resisting enamel.



PRICES: Coolers that provide most of these basic features and compare favorably in price as to size, that's your best cooler buy.

ONLY SNO-BREZE AIR COOLERS OFFER YOU ALL THESE FEATURES!

Yes, seeing is believing and your actual comparative tests will prove: No other cooler on the market to-day can assure greater purchase satisfaction, such long life, economical, superior cooling comfort as Sno-Breze. No question about it, if you sell the best, you will sell **SNO-BREZE — BEST**, by your actual test!

Write dept. I-1, to-day for sales details.

PALMER MFG. CORP., Phoenix, Arizona

SPECIFY

DELAVAN

WHEN YOU NEED

ECCENTRICS



A Complete Line of
Compressor Replacement
Parts

**DELAVAN
MANUFACTURING
COMPANY**

3009 SIXTH AVENUE
DES MOINES 13, IOWA

COW COUNTRY . . .

Continued from page 39

tion was directed along the civil engineering line, but Tom somehow found refrigeration more to his liking, and so since 1923 he has been devoting most of his time and efforts to the refrigeration and electrical contracting business.

Tom, the son of Dr. T. H. Pleasants, was born in Helena, Mont., in 1895, back in the days when gold mining in that section was in its heyday. Shortly after entering the Butte School of Mines in 1917 he enlisted in the U. S. Army, and subsequently served overseas for 26 months with the 23rd Engineers regiment.

Following his hitch in the Army, Tom entered the civil engineering field as assistant city engineer of Lewiston, Mont. He served in this capacity for three years, and during this time was instrumental in the development of many of the civic improvements which this community now enjoys, including concrete paving, street lights, and the city's present sewage system.

Late in the fall of 1923, Tom formed a partnership with L. F. Songer and purchased the old Allen Electric Co. from the Butte Electric Supply Co., which now is known as the General Electric Supply Corp. of Butte. During their first few months of business, the partners were awarded the Frigidaire and Delco Light franchise for central Montana.

Tom Pleasant's first refrigeration experiences, consequently, evolved around the old Frigidaire brine coils for commercial use and the well known B-152 Frigidaire household units. For many years thereafter, Tom pioneered the sale of household and commercial refrigeration in central Montana.

In 1931 the family moved from Lewiston, Mont., to Sheridan, Wyo., where the picturesque Sheridan dude ranch country captured their hearts.

During World War II, Tom served as refrigeration instructor for the government-sponsored defense training program in Sheridan County. To a class of about 22 students he poured



Tom Pleasants and his wife, Carlotta, beam proudly over their husky young grandson.

THE RIGHT COMBINATION FOR PROFIT!



The popular
FEDERAL Combination Walk-in Self Service Display. Ideal in design, made in Add-A-Section construction, a section can be added any time.

SELF SERVICE FRONTS OF TWO, THREE, FOUR, SIX, OR EIGHT DOORS OBTAINABLE.

For more product on display . . . this combination Walk-in and Display, is another Federal store tested sales getter. For over 30 years Federal has maintained its leadership for quality products.

Send for data on the Food Saver Selling Plan. Ask for desirable territories still available.

Federal

REFRIGERATOR MFG. CO.
Waukesha, Wis.

out his many years of practical knowledge in the art of refrigeration engineering, installation, and servicing. The 18-month course covered all phases of refrigeration work.

Married in 1922, Tom and his wife, Carlotta, have shared more than 26 years of wedded happiness, and are the proud parents of two lovely daughters. Virginia Pleasants, 19, currently is pining away for her boyfriend who recently was sent to Germany as a member of the American Air Force. Helen, 21, is the doting mother of a husky year-old boy.

Yes, Tom Pleasants definitely is a family man. He likes nothing better than to sit at home during the long

Custom-built for the
Trailer Industry

...**SANITARY'S**

**NEW FULL LINE SERVES
ANY HOUSING REQUIREMENT**



**MODEL
TE62**

Width, 23 1/4", depth, on body, 20", depth, over hardware, 22 1/4", height, 50 1/4". Net food storage, 6 cu. ft.; shelf area, 12.5 sq. ft. Nine pounds of ice per freezing. Eleven-point control. Attractively styled cabinet sealed against moisture.

Model TE-62 is one of many trailer refrigerators in the new **SANITARY** line. Like all the others, it offers gleaming good looks, capacity combined with compactness, engineered strength to absorb shock, and low-cost service. It is a completely enclosed unit that doesn't require a cabinet recess. You can easily sell it for use in apartments, homes, offices or trailers. Write for complete details.

SANITARY REFRIGERATOR CO.
FOND DU LAC, WISCONSIN

Slash
**VALVE INVENTORY COSTS
UP TO 900%**



GENERAL CONTROLS' engineering offers tremendous savings in inventory investment, stock space and handling costs.

THE NEW SELECTIVE CAPACITY CARTRIDGE PROVIDES INSTANT SIZING ADJUSTMENT

COMPARE THESE FACTS

ORDINARY VALVES...
Separate valves for each back pressure or suction temperature range. Separate valves for each capacity size.

GENERAL CONTROLS V-200 VALVES—One valve for ALL back pressure or suction temperature ranges. One valve with selective cartridge for full range of capacities.

For Freon, Methyl Chloride and Sulphur Dioxide
For Full Capacity Range in each body size at all back pressures with any one refrigerant

**ONLY ONE VALVE REQUIRED
FOR COMPLETE INVENTORY**

Nationally Distributed by Refrigeration Wholesalers • Request Literature

GENERAL CONTROLS
Manufacturers of Automatic Pressure Regulators & Valve Controls
FACTORY BRANCHES AND DISTRIBUTORS IN
PRINCIPAL CITIES

winter nights reading good books—and to Tom a good book is any book which deals with hunting, fishing, or the incomparable beauty of the Big Horn Mountain country.

As is the case with every conscientious refrigeration serviceman, however, Tom's home life and his leisure



Pleasant is the word for the Pleasants' home. A 3-truck garage is on the next lot.

hours often are interrupted by a service call which demands immediate attention. As a result, there have been times when Tom has threatened to retire from the refrigeration business so that he can start living a "sane and normal life"—but if he ever tries to make good on this threat he'll undoubtedly hear a howl of protest from his many satisfied customers who count on him to shoulder all their refrigeration problems.

DETAILS on the design, construction, and operation of carcass coolers for meat packing plants are comprehensively covered in the latest pamphlet of the Application Data series issued bi-monthly by American Society of Refrigerating Engineers.

Entitled "Meat Packing Plant Refrigeration, Part 1, Carcass Coolers" and designated AD 45, the 10-page pamphlet is divided into four major parts: (1) beef carcass chilling coolers; (2) beef carcass holding coolers; (3) hog carcass chilling coolers and (4) chilling coolers for lambs and calves.

AD 45 is profusely illustrated with drawings and sketches showing various type coolers and circulating systems.

Copies may be obtained from ASRE headquarters, 40 West 40 Street, New York 18, N.Y., at 50c each.

**BUY FROM YOUR
REFRIGERATION WHOLESALE**

THE PERFECT COMBINATION



"Cross-Flo"
with female x male
E-Z-SEE

Here's "a picture" of perfection—taken from a working installation showing the 'no-clog, no-pressure drop' Cross-Flo Drier-Filter in combination with the 100% leakproof and foolproof E-Z-SEE Liquid Indicator.

If you haven't yet seen or used Remco's Cross-Flo and E-Z-See—see them at your Wholesaler's; or write for Remco's Instructional Illustrated Circulars.

REMCO
INCORPORATED
ZELIENOPLE, PENNSYLVANIA

OPPORTUNITIES

Classified Advertising Section

Rates: for "Positions Wanted," \$4.00 minimum, limit 25 words. For all other classifications, \$4.50 minimum for 25 words or under, each additional word 15c; boldface type or all capitals, \$7.50 minimum for 25 words or under, each additional word 20c. Box addresses count as five words, other addresses by actual word count. All advertisements in this section are payable in advance.

POSITIONS WANTED

Selected group of men, graduates of well-known trade school, desire employment in Refrigeration Field. Will travel anywhere. Qualified in domestic and commercial refrigeration. Reliable. Contact Placement Dept., Eastern Technical School, 888 Purchase Street, New Bedford, Mass.

FOR SALE

Forged brass fittings $\frac{1}{2}$ " IPS x $\frac{1}{2}$ " flare #445 Kerotest angle valves 95 cents ea. $\frac{1}{2}$ " IPS x $\frac{1}{2}$ " flare 90° elbows 25 cents ea. FOB Chicago. C. B. Goodman & Co. 6459 S. Morgan Street, Chicago 21, Ill.

FOR SALE—Used heavy-duty Chieftain refrigeration units, Model MS14U2HD. Condition fair. $\frac{1}{4}$ H.P. motor, twin-piston compressor. \$38.00 each, \$30.00 in lots of six or over. Coca Cola Bottling Company, Sacramento, California.



IDEAL "Thermo-Grip" INSTANT-HEAT soldering tools

The simplest, safest and by far the fastest way to make sweat fittings or do any other kind of soldering or brazing job. Better, too—permits full adhesion of solder. Works on electrical resistance-heating principle. Concentrates heat under instant control. Heats 1" copper tubing to soldering temperature in less than 1 minute! Easier—pliers grip the work as they heat it, leaving other hand free to handle solder. No fire hazard, no danger. Current is reduced to harmless low voltage. Complete "Thermo-Grip" includes Power Unit, Leads, Switch and one or more attachments.



1000 Watt Unit with "Pliers", "Fork" and "Pencil" attachments also available.

FOR FREE DEMONSTRATION SEE YOUR
LOCAL IDEAL DISTRIBUTOR



FOR SALE

Special Close-Out on brand new freezer plates, coils, and units. Yoder plates—19" x 31" @ \$3.75; 21" x 72" @ \$7.00. Dole plates—22 $\frac{1}{2}$ " x 33" @ \$4.25; 24" x 79" @ \$8.00; 22" x 61" @ \$6.00; 22" x 72" @ \$7.00. (All plates have $\frac{1}{2}$ " male or female end connections.) Bush finned coils 76" x 16" x 2 $\frac{1}{4}$ " 6 tube single row @

\$9.00. Chrysler Airtemp air cooled units— $\frac{1}{4}$ H.P. @ \$54; $\frac{1}{3}$ H.P. @ \$60; $\frac{1}{2}$ H.P. @ \$72; $\frac{3}{4}$ H.P. @ \$102; 1 $\frac{1}{2}$ H.P. @ \$168. Send deposits to General Refrigerators Corp., 678 Broadway, New York 12, N. Y.

FOR SALE—Air-cooled and Water-cooled remanufactured condensing units, $\frac{1}{4}$ up to 2 H.P. Write for particulars, Edison Cooling Corp., 310 East 149 St., Bronx 51, N. Y.

SPECIAL — DOUGH RETARDERS: 72 Bun Tray—6 doors, blower coil and valve, remote \$500.00, 96 Bun Tray—8 doors, blower coil and valve, remote \$650.00. Loudon Sales Inc., 2524 27th Ave., So., Minneapolis, Minn.

Repair CHIPPED PORCELAIN with snow white Porcelene. Tube \$1.50. Trial offer. Send \$3.00 for 3 tubes postpaid. Porcelene, 20 W. Jackson Blvd., Chicago 4, Ill.

BUSINESS OPPORTUNITIES

Will sell paying compressor repair shop due to ill health. Oldest, largest and best equipped shop in mid west. Complete stock modern tools plus electric bake oven. Inventory January 1949, \$23,500, including approximately 600 rebuilt compressor bodies. Will discuss terms with reliable interested party. Eugene Jeffrey, 1523 Putnam Avenue, Detroit 8, Michigan.

POSITIONS AVAILABLE

Wanted refrigeration engineer. Must have at least 10 years' experience in manufacturing and designing and a good technical background. Exceptional opportunity with a well known manufacturer located in Ohio.

Apply by letter to Box 5149 care of this publication.

G-E ANNOUNCES 15 FELLOWSHIP AWARDS

Research fellowships amounting to \$18,460 have been awarded by the General Electric Co. under its education fund to 15 graduate students for advanced study, it was announced today by A. D. Marshall, secretary of the fund and assistant secretary of the company.

Seven of the students received Charles A. Coffin Fellowships for advanced study in electricity, physics, and the physical sciences. Eight other students were awarded Gerard Swope Fellowships for advanced study in industrial management, engineering, the physical sciences, and various scientific and industrial fields.

MAGIC

FREEZE-UPS
ELIMINATED
RIGHT AWAY!



IN A SMALL
BOTTLE



ICE-X quickly cures emergency freeze ups when ice forms at the expansion valve or capillary tube. Harmless to use. Great for Freon, Carrene, or Methyl Chloride systems . . . The dependable liquid anti-freeze.

"ONE SERVICE MAN TELLS ANOTHER - IT'S GREAT"

ORDER FROM YOUR JOBBER OR -

EXCLUSIVE NATIONAL DISTRIBUTOR

THE HARRY ALTER CO.

1728 S. MICHIGAN AVE. CHICAGO 16, ILLINOIS

JOBBER: WRITE FOR SPECIAL PROPOSITION!

ABOUT PEOPLE . . .

Continued from page 46

kota, and Montana, with headquarters at 568 W. Randolph St., Chicago. **Kenneth F. Vilsack** was recently named steel valve representative for the same territory.

James A. Madden has been appointed district manager for the Electric Refrigeration Division of Servel, Inc., in the Southern Atlantic territory. He will serve southeastern Pennsylvania, southern New Jersey, the states of Delaware, Maryland, Virginia, North and South Carolina, Georgia, and Florida. His headquarters will be in Richmond, Va.



Madden has been with Servel since 1940 and during the past year has been eastern service engineer for the New York City and Philadelphia areas.

Frank S. Best has been appointed quality control engineer of Cordley & Hayes, New York City water cooler manufacturer. As assistant to S. A. Whitt, engineering vice president, he will be responsible for control of product quality. He formerly was with International Standard Electric Corp.

John J. Kramer has been advanced to the position of vice president of American Thermal Industries, Inc., Detroit, manufacturer of air conditioning equipment. For the past two years Kramer has been general manager for the Ameri-therm line, and previously was with American Blower Corp. in Detroit.

Frank D. Peltier has been appointed director of engineering of the appliance division of the engineering department of Philco Corp., Philadelphia.

Theodore W. Rundell has been named chief engineer responsible for design engineering of Philco refrigerators; **Matson C. Terry** is chief engineer in charge of developing single-room air conditioners; and **Edward L. Hart**, as acting chief engineer, will handle development of home freezers.

T. Hollister Mabley has been appointed vice president and general manager of Mechanical Heat & Cold, Inc., Detroit refrigeration and air conditioning contractor. In his new post Mabley will supervise Temp-Matic Wholesalers, the firm's heating distributing organization, and will also serve as treasurer of the company. He has been with Mechanical Heat & Cold since 1936.

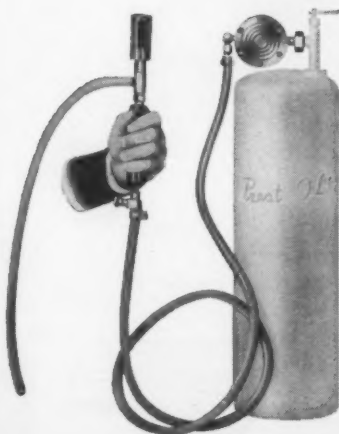
Jack H. Connors has been appointed export manager of Refrigeration Engineering Corp., Philadelphia. He will be in charge of foreign sales and promotion activities on the line of ice plants, bulk ice makers, gaso-

PLAYSAFE

USE
CHICAGO SEALS
and
VALVE PLATES



Prest-O-Lite[®] HALIDE Trade-Mark *Leak Detector*



Quick—Always ready for use. Lights instantly. Locates exact source of leak with a few sweeps of test hose.

Sure—Reacts instantly to smallest concentrations of all non-combustible halide refrigerant gases commonly used in domestic and industrial systems.

Simple—Easy to use anywhere. No delicate parts to get out of order.

Price (less tank) . . . **\$14.50**

"Prest-O-Lite" is a registered trademark of a Unit of Union Carbide and Carbon Corporation.

See your jobber or write us for further information. The Linde Air Products Company, 30 East 42nd Street, New York 17, N. Y. In Canada: Dominion Oxygen Company, Limited, Toronto.

Order from your local Jobber

line and Diesel engine driven compressors, pre-fabricated sectional freeze coolers, and supplies which Reco produces. Following war service with the U. S. Army Engineers in the China-Burma-India theater, Connors since has been with the Department of Agriculture in charge of its tractor program for the Dominion of India.

A number of changes in the personnel of its ice cream cabinet sales department has been announced by Frigidaire Div., General Motors Corp. **L. A. Jackson**, a Frigidaire veteran of more than 20 years, has been transferred from the factory service department to the ice cream cabinet sales department as southeastern regional sales representative. Other reassignments follow: **George F. Jenkins**, sales representative of the eastern region; **John B. Brinkley**, sales representative of the central region; and **A. E. Meyer**, sales representative of the southwestern region. In addition, **J. A. Hanlon**, ice cream cabinet division manager of the Pittsburgh

branch since 1940, has been transferred to the Kansas City branch as manager of ice cream cabinet and national user sales. He is succeeded in Pittsburgh by **J. T. Sheeder**, district commercial division manager since 1945.

Henry E. Perry, president of Commercial Solvents Corp., has been elected to the board of directors of Carrier Corp., Syracuse, N. Y. He fills a vacancy on the board caused by the recent death of Joseph H. McNabb, president of Bell & Howell Co., Chicago.

John G. Kirkpatrick has been named exclusive representative for Brooks Rotameter Co., Lansdale, Pa., in the Pittsburgh area, including western Pennsylvania and West Virginia.

James P. Edwards, Jr. has been named commercial refrigeration sales

manager for Florida Weathermakers, Inc., Jacksonville distributor of commercial refrigeration and air conditioning equipment. Edwards, who has been engaged in the commercial appliance business in Jacksonville for the past four and a half years, will direct the company's sales of Tyler, Gloekler, and Carrier commercial refrigeration units and Temprite water coolers.

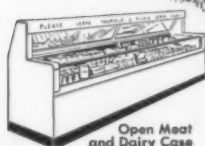
Gits Bros. Mfg. Co., Chicago, manufacturer of lubricating devices and shaft seals, has appointed **Frank A. Kovarik**, general sales manager, to establish and manage the company's new Michigan branch office in Ludington, where operations will be supervised for the entire state of Michigan.

Sigmond Moroh has been named chief engineer of National Air Conditioning Inc., Johnstown, Pa. Moroh will have complete responsibility for all engineering phases of the company's "TEG" Conditioner.

Fastest Selling Line

OF WELDED-STEEL

Refrigerators-Display Cases



Open Meat and Dairy Case



Dry-Kold Beverage Cooler



Frozen Foods Display Case



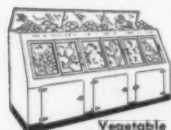
Reach-In Refrigerator



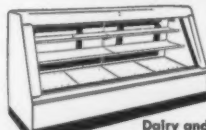
Walk-In Cooler



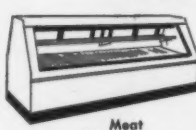
Wall Dairy Box



Vegetable Display Case



Dairy and Delicatessen Case



Meat Display Case

Tyler's Tops in commercial refrigeration equipment—with a complete, store-tested line of fast-selling, welded-steel refrigerators and display cases for groceries, markets, restaurants, hotels, institutions, bakeries, taverns, drug stores and florists.

Leaders in the Tyler Line... always growing, always improving!



FOR ADDITIONAL INFORMATION, WRITE TYLER FIXTURE CORPORATION, NILES, MICHIGAN

See Your **KEROTEST** Wholesaler

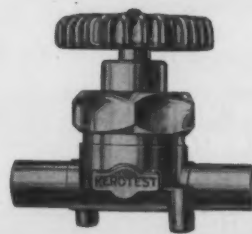
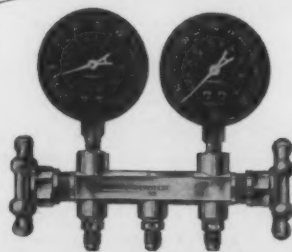
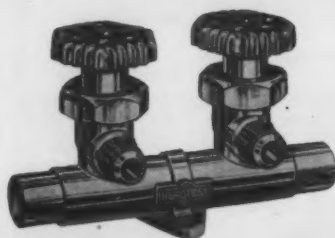
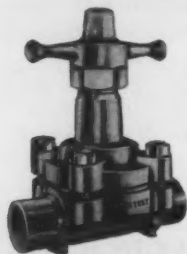


PROMPT, MONEY-SAVING SERVICE EVERYWHERE ON TOP-QUALITY REFRIGERATION VALVES AND FITTINGS

Just pick up your telephone . . . there's a Kerotest Wholesaler ready to serve your day-to-day needs with the finest in Kerotest Refrigeration Valves and Fittings and a host of other service essentials. Look to him always to maintain a complete stock . . . to keep you "up"

on the latest technical developments and to assist you with experienced "know-how." For every need . . . see your Kerotest Wholesaler.

KEROTEST MANUFACTURING COMPANY
Pittsburgh 22, Pa.





Over the COUNTER

Help Your Salesmen Produce

EVERY conscientious salesman realizes he must earn his own pay. If unable to do so, his salary or commission account goes into the red, which in turn invariably leads to his ultimate replacement by a salesman who can make a profit for his employer.

This is a dangerous and poor time to carry along salesmen whose earnings accounts are in the red. During the recent years of easy, expanding business volume, many salesmen's expenses increased to a point entirely out of proportion to any expense standard of the past. This condition

was the result of generally increasing costs of meals, lodging, and most every other item of traveling expense confronting the salesman.

These conditions are still existing to a great extent, with little or no prospects that they will be greatly reduced in the early future. We must, however, recognize that the high cost of traveling seriously increases the overall cost of selling.

In order to meet this situation, to reduce this high expense, the salesman's traveling practices must be more closely scrutinized and, in many instances, should be changed to lower

the traveling expenses while working to increase productive results.

First of all, the money spent by salesmen for entertaining customers and attending shows or meetings should be carefully analyzed and reduced wherever possible. The time spent at shows and meetings may often be cut down. The frequency and type of entertainment can be curtailed considerably without seriously affecting customer relations, if good, sound judgment is exercised in this matter.

Traveling expenses may often be reduced by the rearrangement of salesmen's territories, eliminating unnecessary traveling time, such as too many trips back and forth between the store and customers' places of business.

Planned Trips Cost Less

Arrange territories to provide sales contacts both out and in as close as possible to the store. Attempts should be made to arrange travel to enable salesmen to see more customers each day, if this can be worked out without affecting sales productivity.

The management has a big stake in this overall picture. Considerable study may be required before a rearrangement can be worked out to effectively reduce the sales cost per customer contact. The need, however, is so important that no time or effort should be spared to accomplish these results.

Back Up Sales Efforts

Back up the salesmen's stepped up activities with good publicity and advertising. Take care of orders quickly and intelligently. Make all customer relations productive of increased goodwill.

Follow up on collections efficiently, intelligently, and diplomatically. Watch the inventories closely. Put emphasis on the sale of slow moving and overstocked items. Reorder stock requirements carefully. Keep your inventory in a balanced condition, insofar as possible.

If you can do these things, while stepping up your salesmen's productivity, 1949 should be another good year in spite of the change in the business situation.

ALERT SALES REPRESENTATIVES EFFICIENT SERVICE AT— YOUR

REWA WHOLESALER

Often the difference between a wise purchase and a poor buy is the salesman who serves you.

Your REWA wholesaler has selected sales representatives who know and know well both products and problems. You'll find their cooperative, courteous service a plus factor in the selection and installation of parts and equipment.

And—if credit or adjustment becomes necessary—your account will be handled to your satisfaction, promptly and courteously.

**Your Problems Receive Personal Attention By
Your REWA Wholesaler**

180 MEMBERS
MAINTAINING
OVER 300
CONVENIENT
OUTLETS

BUY FROM A



MEMBER

H. S. McCloud, Executive Secretary

920 East McMillan St., Cincinnati 6, Ohio

**BUY FROM YOUR
REFRIGERATION WHOLESALER**



**Model
6710
Wide
Shelf
Display
Case**

Made extra-wide purposely; so that shoppers are sure to see it. Made extra large purposely; to give room for colossal displays. Made extra roomy purposely; to give space for silent salesmanship.

close more sales with this The merchant who wants to sell more perishables per square foot of floor space and more per foot of wall space needs this extra-wide KOCH fixture.

WIDE open case . . . Thorough refrigeration. Plenty of cold for both display and storage sections.

Designed for continuous arrangement. Any number of cases can be placed end-to-end. Simply remove the glass ends, and install an extra shelf section over the junctions.

This new case is typical of the quickly-enlarging KOCH line . . . the line of least resistance. It is easy to sell . . . easy to make more and bigger profits!

KOCH *Refrigerators*
NORTH KANSAS CITY 16, MO.

SINCE 1883

Send Today for Details and Open Territories

KOCH Refrigerators
North Kansas City, 16, Mo.

Gentlemen:

Please send full information on the KOCH line of refrigerators.

Name _____ Title _____

Address _____

Firm Name _____

City _____ Zone _____ State _____

DU PONT EXPANDS SERVICE ON FINISHES

A field service laboratory to assist industries in the Middle West in handling their finishing problems has been opened in Chicago by the Du Pont Co. It has facilities for spraying and baking furniture, refrigerators and other metal and wood articles, and a large workroom for preparation of panels and similar work. Other Du Pont field service laboratories are located at Philadelphia, Pa., and Roanoke, Va.

The Chicago laboratory, at 2100

Elston Ave., is available to industries—large and small—in all the Middle West. It is under the direction of William P. Fisher.

TRADE-IN GUIDE READY

The 1949 official NARDA Trade-In Guide, containing trade-in information on household refrigerators, washers, vacuum cleaners, and electric ranges, has just been issued. Priced at \$5 per copy, the guide may be obtained from NARDA Guide Co., 20 N. Carroll St., Madison 3, Wis.

FREEZ-KING DISTRIBUTES MILLS FREEZER LINE

Mills Industries, Inc., has announced the appointment of Freez-King Corp. as exclusive national distributor for the Mills Freezer for making ice cream, frozen malts, etc.

Freez-King Corp. itself recently revealed details on its own new continuous freezer, which it hails as the lowest priced portable automatic freez-



L. S. Maranz



A. E. Wilson

er, and thus with the addition of Mills is able to offer an unusually complete line.

Four prominent executives with long experience in the freezer industry head the sales and development department of Freez-King.

A. E. "Al" Wilson, director of sales, was for the past 18 years general sales manager of the freezer division of Mills.

Walter C. Graves, director of sales, eastern division, has been associated with Mills as assistant general manager for 14 years.

Larry H. Ounsworth, vice president in charge of national accounts and sales promotion, was for many years with Taylor Freezers, in charge of sales to national chain accounts.

Leo S. Maranz, president of Freez-King, has been associated with the freezer industry for over 23 years in both sales and design. He has designed and headed sales for several freezers now on the market, including the Knight-Freezer, manufactured by Bastian Blessing, and the Tuthill Freezer.

VAUGHAN ADDS TO DUTIES

Victor G. Vaughan, general manager of Spencer Thermostat Div., Attleboro, Mass., has been elected executive vice president of Metals & Controls Corp., parent company. In his new post he will be active in the affairs of both Spencer and the General Plate Div. of the company.

BUY FROM YOUR REFRIGERATION WHOLESALER



MODEL 1-131

A Model for Every Need

FOR YEAR 'ROUND PROFITS

No matter what the season—or the nature of fountain operation—NEW profits are being built with Soft Ice Cream and Frozen Custard dispensed from Sweden Speed Fountain Freezers.

HERE'S HOW:

- Sweden dispenses popular products of delightfully smooth texture and delicate taste. Builds volume!
- Sweden products eliminate shrinkage, require less weight per serving than hard ice cream. Cuts food costs on average of 50%.
- Sweden eliminates dipping, scraping, handling. Cuts labor costs 50% or more!

SPECIALLY DESIGNED for fountain use, SWEDEN is the most practical freezer ever manufactured. Both floor and table models available, producing 5 to 30 gallons per hour. Yet—

profits begin with sales as low as one to five gallons per day! Floor space requirements are small. Approximately 7 feet x 2 feet for Model 1-131; even less for many other models!

SWEDEN SPEED FREEZERS

the FOUNTAIN FREEZER

SWEDEN—Gold Medal Winner at the Brussels Food Exposition—sharply reduces food and labor costs. For more information, write to:

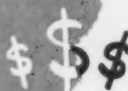
SWEDEN FREEZER MANUFACTURING CO.

DEPT. F-10-L • SEATTLE 99, WASHINGTON

you'll save



time



money



worry

when you standardize on

Wagner

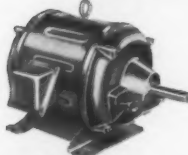
motors

because of:

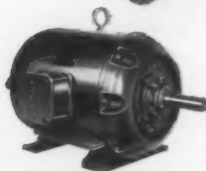
- Immediate Availability on Many Types and Sizes.
- Improved Engineering Features that Assure Long Life and Efficient Operation.
- A Liberal Warranty.
- A Wide Variety of Types and Sizes.
- Nationwide Service Facilities with Replacement Motors and Parts—When You Need Them—Where You Need Them.



Repulsion Start Induction Motor ½ to 15 h. p.



Open-type, Polyphase Squirrel Cage Motor ½ to 400 h. p.



Explosion-Proof Motor ½ to 200 h. p.



Totally-enclosed, Fan-cooled Motor 1½ to 200 h. p.

Regardless of what your motor requirements may be, Wagner can furnish a standard motor to fit your needs. Twenty-nine branch offices, located in principal cities, are ready to assist you whenever you have a motor problem. Write for Bulletin MU-185 for information on the complete line of Wagner Motors.

Wagner
Electric Corporation
EST. 1891

Wagner Electric Corporation

6442 PLYMOUTH AVE., ST. LOUIS 14, MO., U. S. A.

Consult Wagner Engineers on all Electric Motor Problems

ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES • AUTOMOTIVE BRAKE PRODUCTS

and AIR CONDITIONING • MAY, 1949

GET MORE BUSINESS

...by assuring
trouble-free
compressor
operation
with Texaco
Capella Oils

WHETHER you're a service engineer who *uses* compressor oils, or a dealer or distributor who *sells* them . . . you'll do more business with *Texaco Capella Oils* because they assure smooth, trouble-free refrigerating compressor operation.

Texaco Capella Oils are highly refined, stable and moisture-free oils that do not react with refrigerants. They have low pour tests, and are highly resistant to gumming and sludging. They keep compressors and coils *clean*, assuring greater operating efficiency and economy.

There are suitable viscosities of *Texaco Capella Oils* for compressors of every size and type. They come in handy 1-qt., 1-gal. and 5-gal. sealed containers, and are approved by leading compressor manufacturers.

You'll get more business with *Texaco Capella Oils*. The Texas Company, 135 East 42nd Street, New York 17, N.Y.

FREE LUBRICATION GUIDE—Latest edition lists makes and types of compressors, and refrigerants used in 63 Electric Refrigerating Units and 31 Air Conditioning Units. Shows recommended grade of *Texaco Capella Oil* for each. Use guide as wall chart, or bind into service manual.



TEXACO Capella Oils
FOR ALL AIR CONDITIONING AND REFRIGERATING EQUIPMENT



Tune in . . . TEXACO STAR THEATRE every Wednesday night starring Milton Berle. See newspaper for time and station.

THE PRACTICAL

Refrigeration Applications

MANUAL... by Harold Smith

THE Practical Refrigeration Applications Manual extends a helping hand to those refrigeration and air conditioning men who occasionally encounter field engineering problems too tough for them to handle. Space limitations make it impossible to give complete detailed information covering each step necessary for the installation or erection of refrigeration equipment, insulation, or fixtures. It is necessary to assume that those readers who request assistance with their problems are familiar with these basic fundamentals. If they are not, it is suggested that they seek this advice from their sources of supply when purchasing the materials which they intend to use on the job. Most suppliers are equipped to furnish such information. Readers are urged to submit their problems to this department. Each letter of inquiry will be answered personally by the author. The most interesting ones will be published in these columns. All problems should be clearly and completely stated and addressed to: COMMERCIAL REFRIGERATION AND AIR CONDITIONING, Manual Dept., 1240 Ontario St., Cleveland 13, Ohio.

PROBLEM

RECENTLY we received a service call to a private home, the complaint being high power bills on the freezer.

"On investigation we found a converted reach-in cabinet measuring 6 x 7 x 2 feet, with eight inches of rock wool added on five sides. The front, containing eight doors, did not have additional insulation, but had two inches of rock wool between the glass panels.

"This box contained six Dole plates, 22 x 30 inches, which were connected as shown in the accompanying diagram and were fed by a Detroit valve No. 6732415 having a $\frac{3}{4}$ -inch orifice and rated at 10 pounds.

"The unit is a water cooled Kelvinator using methyl chloride and having an oil separator. Suction line is $\frac{5}{8}$ inches and the liquid line is $\frac{3}{8}$ inches.

"At the time we made the check the head pressure was 70 pounds and the suction pressure was 10 inches vacuum. Box temperature was 5 F. A small fan was located in the bottom corner of the cabinet.

"For your further information, here is some additional data:

"Our customer would prefer the box temperature to be below zero F, although 5 F is satisfactory.

"As high as 400 pounds of beef are frozen in this box at one time. However, this happens only seldom, as there are five in the family. Average freezings are about 25 to 50 pounds once every week or two. The food frozen consists primarily of beef cuts, fowl, fish, pastry, vegetables, berries, and pork.

"The blower is a Dayton utility blower rated at 50 cfm, of a style originally intended as a coal heater or ventilator blower, and it runs continuously.

"As you will note from the diagram the inside dimensions of the box are 84 x 24 inches. The plates are 22 x 30

inches. This leaves 6 inches at each end and 12 inches in the center between plates and cabinet lengthwise on each tier, and 1 inch on each edge between the plates and cabinet in depth. As to height there is 22 inches between tiers. Food load is not crowded. The plates are connected by $\frac{5}{8}$ -inch tubing.

"The door seals are double sponge rubber, tight enough to tear paper.

"We would appreciate any suggestions you might offer to improve the performance of this plant with the present refrigerant. We would also welcome the data necessary to convert this system to F-12 or/and F-22.

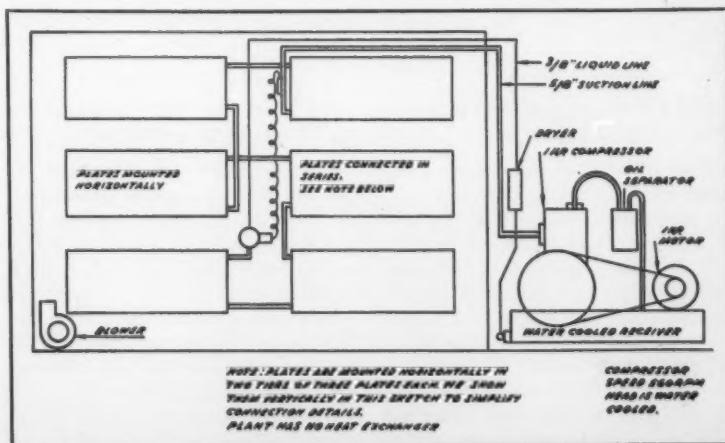
"We would also be glad to know where we might secure a reference book dealing with the conversion of condensing units from one refrigerant to another, and from air to water cooled."

SOLUTION

We have carefully checked over the conditions outlined in your letter regarding the converted freezer cabinet. This appears to be one of those jobs where the continuous running time may be caused by one or several conditions.

Of course, a methyl chloride condensing unit is not quite as efficient on low temperature work as a condensing unit using Freon. However, your suction pressure gauge reading of 10 inches vacuum, indicating a -27 F refrigerant temperature with a 5 F box temperature and a continuous operation of the condensing unit, suggests either an excessive heat load, rapid heat flow into the cabinet due to poor condition of the insulation or from leakage at the doors, inadequate low side equipment or plate surface, insufficient circulation of air, or a condensing unit that is not producing its rated capacity.

Checking up on the normal Btu



load requirements based on conditions as outlined in your letter, it would seem that an hourly load of around 3000 Btu should handle this job in an approximate 18 hour operation, provided insulation is efficiently retarding heat leaks, doors are tight, cabinet is used mostly for storage, and shelves are not crowded, obstructing the circulation of air throughout the cooler.

HEAT EXCHANGER WOULD HELP

The circulating fan is small and, therefore, the plate coil efficiency is increased very little over natural gravity circulation and conduction. The plate surface installed should handle approximately 3000 Btu per hour with limited air circulation. The 1-hp water cooled condensing unit, if in good condition, should also handle 3000 Btu per hour at 10 inches vacuum and -27 F. refrigerant.

The expansion valve should be adequate for the job, and the oil separator should eliminate any oil clogging or warm spots on the plates. A heat exchanger probably would increase the overall efficiency of the compressor and undoubtedly benefit the operation.

If, however, the insulation around the cabinet is in poor condition, more heat leak will exist than would be indicated. The front of the cabinet is rather poorly insulated, allowing considerable natural heat leak at the front even though the doors are tight.

BETTER CIRCULATION NEEDED

We would, therefore, conclude that the actual load is in excess of the 3000 Btu load arrived at in our calculations. We would recommend that you place the fan inside the cabinet at a point where maximum circulation will result or replace the small fan with one having twice its capacity.

Check to see that the thermal bulb is installed on the suction line close to where it goes out of the cabinet and is in good contact with the tubing. Also make sure that it is properly placed to control the valve action at all times.

If possible, I would add to the low side equipment two more 22 x 30-

inch plates hung vertically in front of the rear wall to increase the evaporator surface. This should increase the low side capacity approximately 1200 Btu per hour. With this added low side capacity you should be able to operate this job with a higher refrigerant temperature, say at -20 F refrigerant, and secure a box temperature of zero or below.

SYSTEM SHOULD CYCLE

With the higher refrigerant temperature of -20 F the compressor capacity should increase to around 4500 Btu, giving enough additional capacity to put the job on a cycling operation. This, of course, will result in cutting down running time, thus reducing electrical and water expense.

We would recommend the installation of a heat exchanger on the line outside the cabinet. This will stop any tendency for frosted suction lines with valve opened to feed all the plate surface. The low pressure switch should be set at 3 inches cut-in, 8 inches cut-out. You may find the cut-out point can be raised to 6 or 7 inches.

CHECK INSULATION CLOSELY

We would recommend by all means that you examine the insulation, if possible, to determine if it is in good condition. Replace it with new insulation material, properly applied, if you find it in poor condition.

We would suggest that you write directly to Kelvinator regarding a change-over of refrigerants from methyl to Freon in this machine. We believe, however, that the equipment will work satisfactorily with methyl if the equipment capacity is increased as suggested or the excessive heat leak is reduced, if you find evidence of this condition.

We can not refer you to any textbook dealing with the conversion of condensing units from water cooled to air cooled. However, this conversion is being done in the field frequently and usually does not involve any particular problems if the work is done carefully and the system is kept dry while making the change-over.

CUTLER-HAMMER MOVES TWO FIELD OFFICES

Two new office moves have been announced by Cutler-Hammer, Inc. Its Columbus office, now located at 2700 E. Main St., operates as a branch of the Cincinnati district office under the direction of R. D. Yoder.

Headed by E. J. Gove, the Youngstown office at 25 E. Boardman St., is a branch of the company's New York district office. The moves were made to facilitate handling of expanded sales activities in those areas.

CHICAGO TRADE SCHOOL OFFERS NEW COURSES

Utilities Engineering Institute of Chicago has announced publication of a new illustrated 72-page catalog which includes full descriptive information concerning all U.E.I. courses of training.

This school, which has been training men for the industry since 1927, has recently enlarged its resident training facilities and now offers several new courses to men in the refrigeration and air conditioning fields.

USAIRCO NAMES OUTLETS IN KANSAS, NEW YORK

Announcement has been made by the packaged air conditioning sales division of United States Air Conditioning Corp. that two new major distributors of this line of store conditioners, window air conditioners, and console room conditioners have been named in Kansas City and New York City.

Distributor in Kansas City is Refrigeration Equipment Co., refrigeration equipment wholesaling firm headed by E. L. Tramposh. This firm, which this year is celebrating its 10th anniversary, serves some 2000 accounts in Kansas, northern Arkansas, and western Missouri, and maintains branches in Wichita and Topeka, Kans., and St. Joseph, Mo.

Fidelco, Inc., also a 10-year-old firm, will distribute the same line of equipment throughout New York City and Long Island.

AMANA ADDS TWO-TEMP



Refrigeration Division, Amana Society, Amana, Iowa—long a manufacturer of home freezers—announces entrance into the household refrigerator field with a new Amana 9-cu. ft. deluxe combination freezer-refrigerator, following current "two-in-one" trend in household refrigerators toward separate freezer and separate refrigerator compartments serviced by individual doors. This model has a refrigerator compartment in excess of 7 cu. ft. capacity which needs no defrosting. In-a-door temperature indicators and individual temperature controls are features of both refrigerator and freezer compartments. Freezer compartment has 65 pounds frozen food capacity and includes two quick release ice cube trays. Two tone, gold and silver effect chrome roller type lock latch door handles respond to finger touch. Exterior is finished in double coated white enamel on bonderized surface. Five year warranty on complete refrigeration system is included.

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Revere Dryseal Tube comes in sizes from $\frac{1}{8}$ " to $\frac{3}{4}$ " O.D., and is packed two 50-foot coils to a package.

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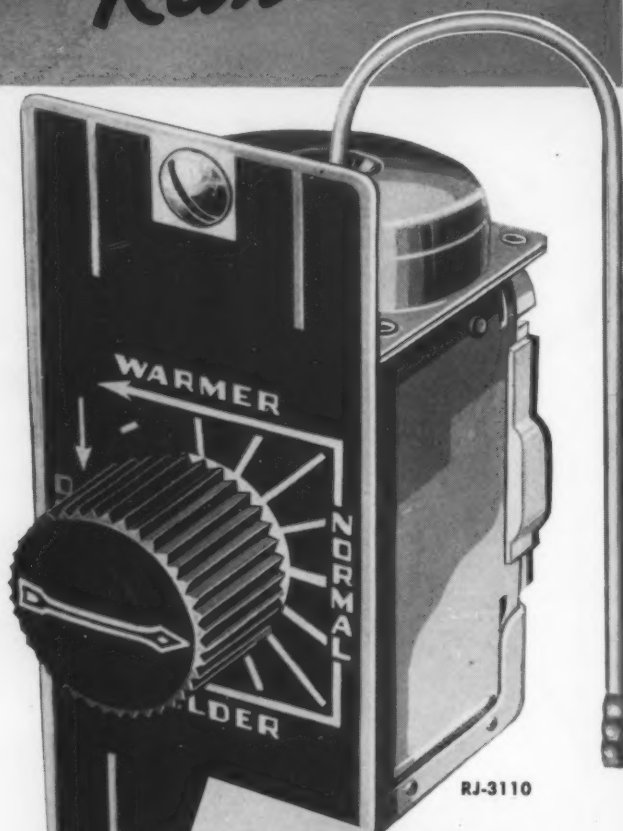


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THE SERVICE MAN'S DEPARTMENT

Here's how

Edited by
Warren W. Farr

Is Your Stockroom Short On Space?

If your stockroom is crowded—and somehow most refrigeration firms never seem to have quite all the space they need—you may be able to make good use of this idea for the storage of V-belts which is being utilized by one enterprising Nebraska dealer.

I do it this way...

HERE is an idea that will help you keep expansion valves from freezing up.

On all adjustable expansion valves, simply use an eye dropper to place 8 or 10 drops of Prestone or glycerine in the adjusting end of the valve where moisture has a tendency to accumulate as a result of the breathing of the valve.

This solution will not evaporate and leaves no odor. It does the job. So why not carry a small bottle of it, along with an eye dropper, in your tool box at all times?

P. V. Carpenter, St. Louis, Mo.

Stymied by his own stockroom space problems, this dealer sat down to think it over. Tipping back in his chair, his gaze came to rest on the open, uninterrupted expanse of the stockroom ceiling.

The thought flashed through his mind that here was a lot of perfectly good space going to waste. The result: this dealer's V-belt display now is suspended from this ceiling, making productive use of what previously had been nothing but waste of space.

The display rack is as simple as can be. It consists merely of a rectangular wooden framework fitted with hooks on which to hang the belts. This whole affair then is suspended from the ceiling in a horizontal position by means of chains connecting

WANT TO EARN \$5?



You don't have to be a writer or a literary genius! Just jot down some of the shortcuts you've developed in your maintenance or installation work and send them to **HERE'S HOW** EDITOR, COMMERCIAL REFRIGERATION AND AIR CONDITIONING. Your \$5 will be paid promptly when your maintenance tip is published in the magazine. Let's hear from you!

each of the rack's four corners to four screw eyes fastened in the ceiling.

Be sure, of course to locate these screw eyes so that they will be imbedded in ceiling joists or some other firm support. It is a simple matter to adjust the chain lengths so that the belts suspended from the rack are within easy reach.

This idea not only conserves space, but it also makes it easy to keep the belts properly separated by sizes and provides a maximum amount of display.

Are Driers Necessary?

The question has been frequently raised by refrigeration men as to whether driers are necessary on a system which has been thoroughly dried.

The answer is that it is virtually impossible, from a practical standpoint, to remove all moisture which may be present in a refrigeration system.

The major sources of moisture which get into the system are as follows:

(1) Moisture which may be present in the original refrigerant charge.

(2) Moisture which may be present in the oil.

(3) Moisture in air which was initially in the piping or other parts of the system.

(4) Moisture drawn into the system from outside air when the system is operating in vacuum.

The combination of all of these potential sources may produce sufficient moisture in the system to cause considerable difficulty.

Freeze-ups are the most common

I do it this way...

I HAVE found from my own experience that a neat, clean, and complete tool box is a big asset to any refrigeration service man in improving the efficiency of his operations.

Here is one suggestion that you will find very helpful in keeping your tool box in order. Keep those small assortments of gaskets, nuts, bolts, washers, valves, and similar items clean and handy by storing them in small, flat tin boxes.

The girl in the office always has a couple of typewriter ribbon tins on hand, or ask some of your pipe smoking associates to save you their empty flat tobacco tins. There are a lot of sources from which you'll be able to get small tin boxes of this sort—and they'll fit your small parts tray, too!

John E. Hayes, Springfield, Mass.

indication of excessive moisture. However, freeze-ups may not occur on evaporators operating above freezing, such as on air-conditioning applications.

Without freeze-ups there may still

be sufficient moisture present in the system to cause other difficulties.

Water present in the system may react with the refrigerants to form corrosive acids or alkalis which will result in adverse effects upon parts of the refrigerating system.

For example, sulphur dioxide will combine with moisture to form sulphurous acid while methyl-chloride will combine with water to form hydrochloric acid. Both of these acids are highly injurious to finished machine surfaces, bearing, and control mechanisms.

The Freon group may also form acids upon contact with water, particularly in the presence of iron. The acids thus formed not only attack metal parts but will break down the lubricating oil to form heavy carbon deposits which appear as sludge.

The combination of acids and sludges will cause many operating difficulties, including corroded metal parts, excessive wearing, scaling, and "copper plating."

In addition to these major sources of moisture, which are fairly obvious to the skilled refrigeration man, there are other indirect sources which cannot be overlooked.

Water vapor is present in the flame of a soldering torch and may contribute to moisture in the system. Certain welding fluxes have a water base or may absorb water and carry it into the system.

There is also evidence that a slight amount of moisture may cause a chemical breaking down of organic materials in the system such as cotton insulation on motor windings and the result of this chemical action may be the formation of additional moisture.

Many of the factors which contribute to moisture in a system can be controlled by careful manufacturing and careful installation. However, certain of the factors are beyond the control of even the most conscientious manufacturer or installer.

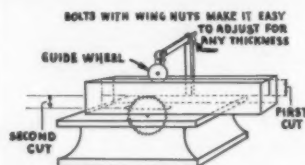
Therefore, the value of adding a drier of adequate size to any refrigeration system has been definitely established as good insurance against troubles caused by moisture.

The cost of a drier is a good investment for the refrigeration manufacturer, the refrigeration contractor, and the purchaser of the equipment.

**BUY FROM YOUR
REFRIGERATION WHOLESALER**

*I do it
this way...*

A FLEXIBLE guide for a small power saw can prove to be a real time and labor saver for any refrigeration man who is frequently called upon to apply cork insulation to refrigerated enclosures. Many times on such jobs 3 or 4 inch cork board is used, but a power saw large enough to cut 4 inches deep in one cut is extremely inconvenient to carry around. With the guide which I have devised, however, the job can be done very satisfactorily with a much smaller saw (the one which I use cuts only 2 1/4 inches in the clear).



I am well aware that stationary guides of one type or another are commercially available, but if you need a piece of cork measuring 36 inches long and 4 inches thick, with a width of 8 inches on one end tapering to 10 inches on the other, any type of a fixed guide becomes useless. That's where the guide which I devised comes in handy.

As indicated in the drawing, this guide consists of a jointed arm attached to the saw table, the joints being fastened with bolts and wing nuts to make the arm readily adjustable for any thickness of cork. On the end of this arm a small roller is attached. This disc should be fabricated of metal which is a little thinner than the saw cut.

In making the first cut, use the roller to follow a line marked on the top side of the cork. Then turn the piece of cork board over and make the second cut, this time with the roller adjusted so that it follows along in the first saw cut. This will give you a clean cut through the entire board, and will produce joints that are just as good as those you can turn out with a hand saw.

*Earl D. Rybarczyk,
Prairie du Chien, Wis.*

Question:—While there have been many discussions on driers for Freon and Methyl what about driers for old SO₂ jobs? Is Silica Gel considered a good drying agent for SO₂?

Answer:—Silica Gel is considered a good material to use in a drier on an SO₂ installation.

WESTINGHOUSE SETS PLAN FOR SERVICE TRAINING

Plans for the training of more than 10,000 service men affiliated with dealers and distributors of Westinghouse Electric Appliance Division products were completed at the division's first postwar national service conference in Mansfield, Ohio.

The week-long meeting, headed by L. K. Baxter, manager of the division's service department, was attended by 100 key service personnel of the distributor organizations.

The distributor service supervisors planned to conduct more than 500 meetings in the following months, covering the entire United States. Mr. Baxter estimated that the cost of the training meetings would exceed \$200,000.

"The 1949 training program, with its emphasis not only on the servicing of new appliances, but the full-line of Westinghouse products, is the largest service training program ever launched by the company," Mr. Baxter said.

COAST HOMES SHOW IS SET FOR JUNE

The fourth annual Construction Industries Exposition and Home Show, in which the Refrigeration Contractors Association of Los Angeles is co-operating as a sponsor, will be held in the Pan-Pacific Auditorium in Los Angeles from June 2 to 12. More than 125,000 persons visited the exposition last year.

TRADE SHOW CLINIC OPEN TO ALL

The first annual trade show clinic under the auspices of the Exhibitor's Advisory Council has been scheduled for May 26 at the Statler Hotel, New York, it has been announced by R. H. DeMott, president of the organization.

In announcing the meeting, DeMott stressed that anyone interested in industrial exhibitions is welcome. "You do not have to be a member of the EAC to attend the clinic," he said.

The clinic is being established to make industrial exhibitors, public relations and advertising men, and trade publication editorial personnel better acquainted with the background and problems of trade shows, and to point the way to further improving the trade show as a sales medium.

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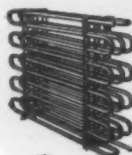
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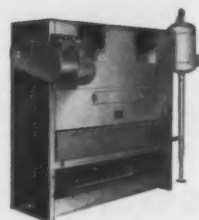
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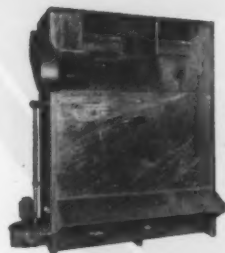
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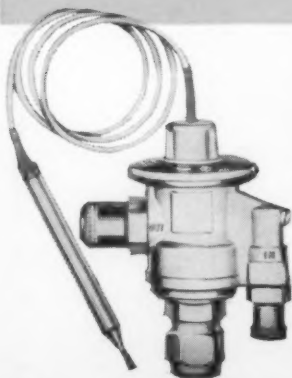
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